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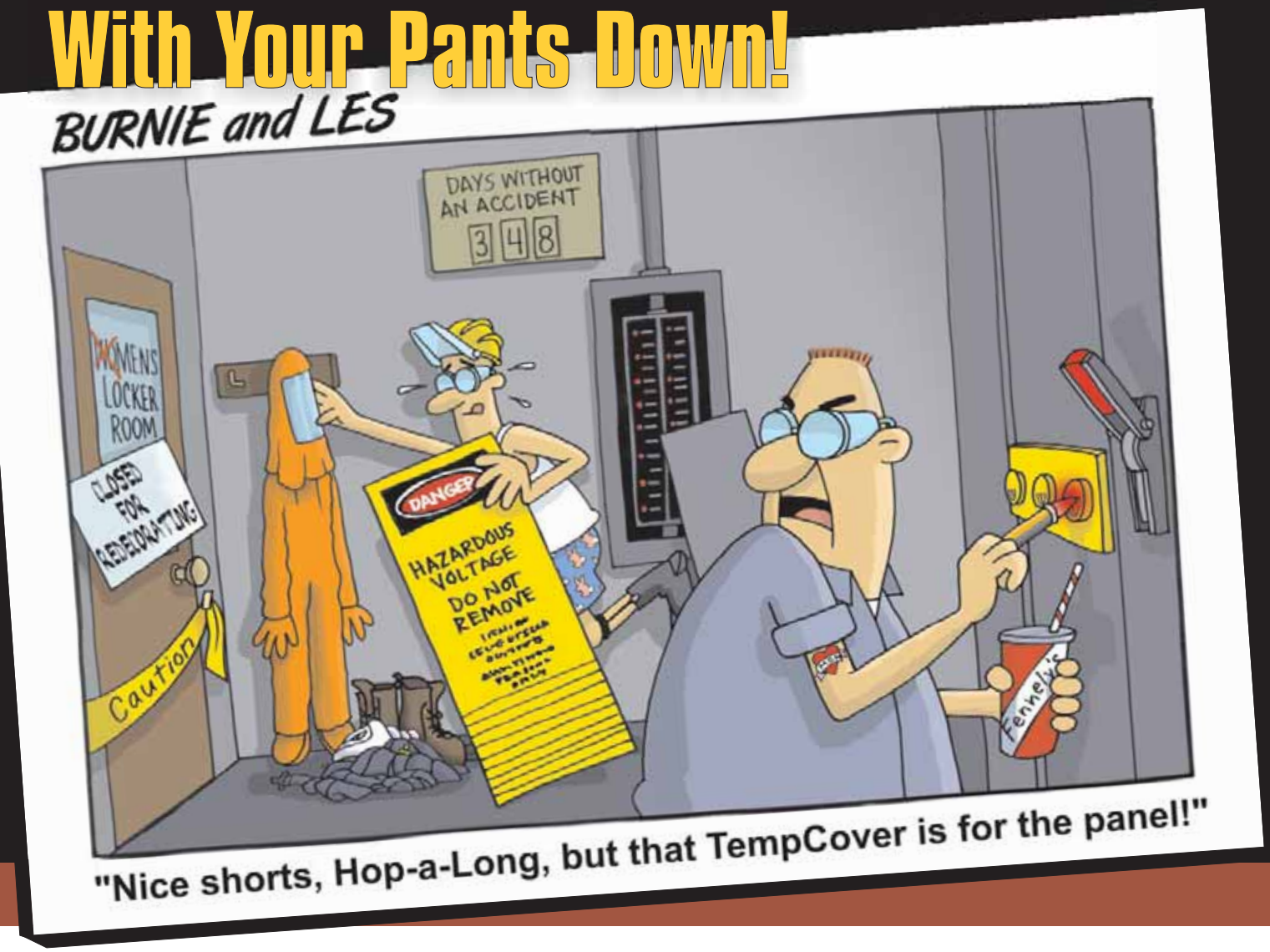

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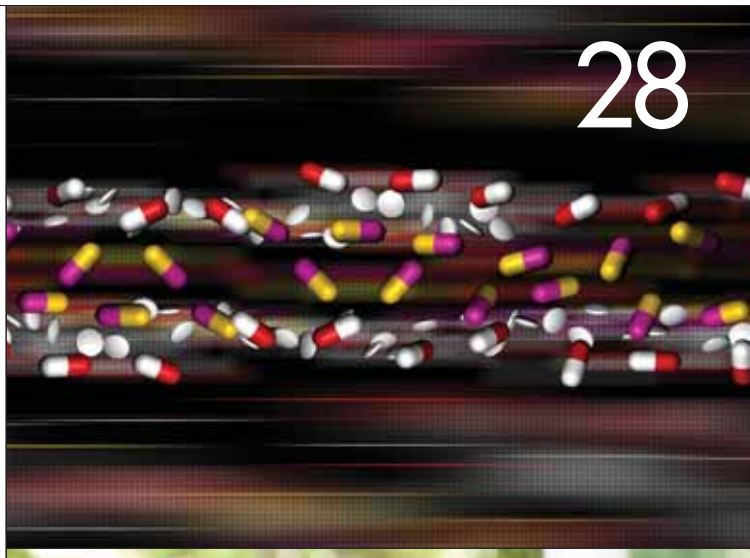

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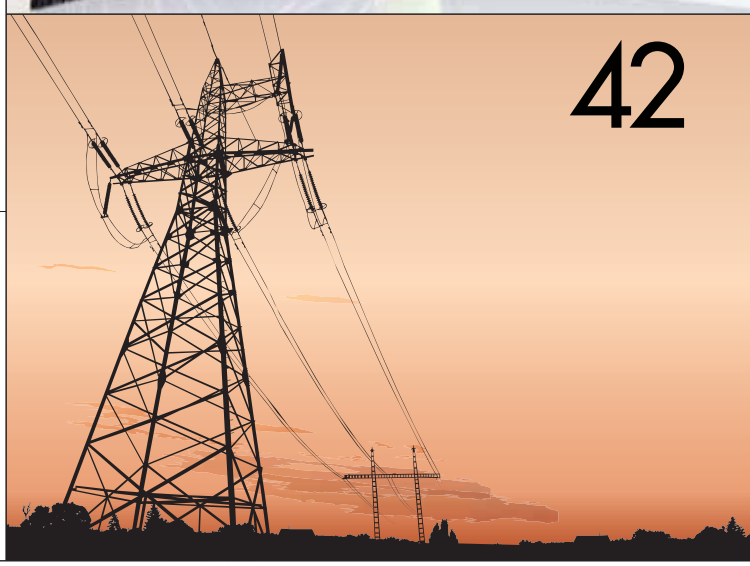

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I'M NOT A GOOD COOK, BUT I KNOW PERFORMANCE MANAGEMENT

>> Performance management is the process of assessing progress toward achieving goals. That sounds pretty fancy, but it's really just a straightforward method we use every day. We get or give performance appraisals at work. We measure and monitor our calorie and carbohydrate intake. We weigh ourselves. We visit the dentist to check for cavities. We monitor our car's oil usage and tire pressure. We check the inside moisture level of a cake to see if it's done (that's what I've heard, anyway — I'm not much of a cook).

Even though I'm not a good cook, I know that every day, I practice performance management — I assess progress toward achieving my goals of good health and avoiding a breakdown on the highway. We all do that in some way.

In manufacturing, real-time performance management strategies have decreased inventory, manufacturing cycle times and machine downtime. These strategies have helped companies to achieve more complete and on-time shipments of better quality products. It's really just a matter of making sure that technical resources in the infrastructure perform as you expect and provide the best value for your investment.

That's why metrics such as overall equipment effectiveness and other key performance indicators are so important to you. Performance management provides a way to collect, organize and analyze the data you need to identify areas for improvement. Then, you can make those improvements.

Cooking, using a curling iron, swimming the butterfly stroke, playing the oboe — I don't know how to do any of these things. But I know performance management. And so do you. And so does Rockwell Automation. Check out the comprehensive discussion of manufacturing performance management, starting on page 20, to learn how you can optimize your operations. Until next time …

Theresa Houck, Executive Editor

ROCKWELL AUTOMATION TO ACQUIRE RUTTER HINZ

Rockwell Automation, Inc. has agreed to purchase the majority of the assets of engineering company Rutter Hinz Inc., a wholly owned subsidiary of Rutter Inc., a publicly held Canadian company. Headquartered in Saskatoon, Canada, Rutter Hinz's annual sales are about US$35 million.

The acquisition includes Rutter Hinz's engineering and automation businesses in Canada and the United States, but not its Newfoundland consulting engineering business or the assets of Rutter Technologies Inc. These operations will continue as part of Rutter Inc.

With eight offices in Canada and two in the United States, Rutter Hinz has engineering expertise in industrial automation, process control and power distribution, specifically for the oil and gas industry, in addition to the pipeline, utility, mining, forestry, and food and beverage sectors. The company's management team and approximately 220 employees will join the Rockwell Automation Systems & Solutions business unit.

"This acquisition accelerates the growth of Rockwell Automation's business and reach in Canada's heavy industries and oil and gas market, enhances our Canadian oil sands opportunities, and establishes a robust delivery capability in a major market with critical expertise," said Terry Gebert, vice president and general manager, Rockwell Automation Systems & Solutions.

"This acquisition … establishes a robust delivery capability in a major market with critical expertise." — Terry Gebert, Vice President and General Manager, Rockwell Automation Systems & Solutions.

"Rutter Hinz customers will continue to receive the high level of service they currently enjoy," said Ryan Hinz, Rutter Inc. president and CEO.

"This acquisition continues to strengthen our global project management and engineering solutions delivery capability — as we have done with ProsCon and ICS Triplex acquisitions in Europe, CIE in Latin America, and Xi'An Hengsheng in China," Gebert added. "Customers will now benefit from the expanded portfolio of application solutions, expertise and delivery capacity that Rutter Hinz offers, particularly to the oil and gas market."

Rockwell Automation Industry Solutions
www.rockwellautomation.com/go/tjindustries

WEED INSTRUMENT ACQUIRED BY ULTRA

Weed Instrument Co. Inc., a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, has been acquired by Ultra for $31.6 million.

Ultra specialized in sensors and control systems used for the safe operation of nuclear reactors. Ultra has concentrated its nuclear systems activities, both military and civil, in its Information & Power Systems division. Weed will be a bolt-on to that division and will report through the group's Advanced Tactical Systems business in Austin, Texas.

Weed is a privately owned company that designs and manufactures high integrity instrumentation for the civil nuclear and other industries, mostly for the North American market. It specializes in temperature and pressure sensors and fiber-optic converters and switches for nuclear, aerospace and military applications. Based in Round Rock near Austin, Weed employs about 100 people.

Weed Instrument Co., Inc.
www.rockwellautomation.com/go/p-weedinst

COOPER OPENS TECHNOLOGY CENTER

Cooper Bussmann, a division of Cooper Industries and a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, recently celebrated the grand opening of the Cooper Technology Center near Cooper Industries' headquarters in Houston as part of its 175th anniversary celebration. The 35,000-square-foot facility features an auditorium, conference room and multiple training rooms designed for education and hands-on demonstrations of the Cooper Industries' line of industrial products and solutions.

The products of all eight Cooper divisions are represented in the Technology Center, with dedicated displays and product in the building design itself. A replica of an industrial plant helps to complete the learning environment with more than 250 of Cooper's industrial offerings installed as they would appear in a refinery.

Based on the current schedule and bookings to-date, several thou-

sand people are expected to use the facility each year.

Cooper Industries CEO, Kirk Hachigian explains, "Our vision for the Cooper Technology Center came from the industry's thirst to keep current with the latest technology and products that facilitate increased productivity, enhanced energy efficiency and maximum safety for both workers and facilities. Now professionals who design and build industrial facilities can see Cooper's entire line of industrial offerings under one roof, from the newest lighting technologies and electrical fuses to transformers and energy automation solutions to mass notification systems."

Cooper Bussmann
www.rockwellautomation.com/go/p-cooper

SCHREIBER JOINS BACHELOR CONTROLS

Philip Schreiber recently joined Bachelor Controls, Inc. (BCI), a Rockwell Automation Solution Provider. Schreiber will spearhead the company's expanded efforts in providing manufacturing information management solutions using analytical and intelligence software tools.

Philip Schreiber oversees Bachelor Controls' manufacturing information management solutions.

Schreiber comes to BCI from Northwest Analytical, a provider of software for manufacturing analytics. Before that he worked at Rockwell Automation within both the Process Engineering and Information Solutions business units. He has worked with the World Batch Forum since its inception, and has co-authored articles and designed training courses on the application of the ISA-88 and ISA-95 standards.

"Our clients rely on us to play a lead role in helping them address their needs in the manufacturing information space," said Ray Bachelor, president of Bachelor Controls, "and Phil's technical and business development experience will make him well-suited to lead that effort, concentrating particularly in the food and life science industries."

Bachelor Controls, Inc.
www.rockwellautomation.com/go/p-bachelor

PWR-PACK FORMS CODIAN FOR ROBOTICS

To be able to offer a better solution to the delta robotics market, Rockwell Automation Encompass™ Americas - Europe partner PWR-Pack of the Netherlands has split off its robot activities and formed it into a new company named Codian.

Under PWR-Pack, the delta robotics activity has grown rapidly, so this area has been separated to the Codian company to maintain a focus on quality and continuous improvement that is separate from the turnkey solutions PWR-Pack builds for the packaging industry. Codian will be focused on the OEM market for high-speed pick-and-place robotics.

Codian USA will be building and selling robots out of its Waukesha, Wis. office to better serve the Northern American market and provide fast response to customer needs. PWR-Pack will continue its business and further specialize in the field of robotic picking lines with the use of Codian delta robots.

PWR-Pack Americas
www.rockwellautomation.com/go/p-pwrpack

>> Encompass Partner Briefs

Fluke Offers Online Training. Fluke Corp., a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, has unveiled www.TeachMeFluke.com. The site offers training that includes calibration and metrology, electrical measurement safety, power quality and thermal imaging, and free classroom materials for qualified instructors and company trainers. Online seminars, hands-on seminars, application notes, videos, virtual demonstrations, online tools and links to additional resources also are available.

Fluke Corp.
www.rockwellautomation.com/go/p-fluke

CREAMERY CHOOSES PAVILION TECHNOLOGIES

Bongards' Creameries, Bongards, Minn., a creamery cooperative, has selected the Pavilion Technologies Dairy Industry Solution from Rockwell Automation for advanced process control of its deproteinized whey (DPW) and stork spray dryers at its Perham, Minn. plant.

The Bongards' DPW and stork spray dryers are essential for removing moisture to produce high-quality powdered whey products. The Pavilion Technologies Dairy Industry Solution controls the final product's average moisture to a desired target, while reducing overall moisture variability and operating just below the glass transition point to achieve optimal performance.

Bongards' Creameries uses Pavilion Technologies Dairy Industry Solution for advanced process control of its deproteinized whey (DPW) and stork spray dryers at its Perham, Minn. plant.

Improving control of its dryers will help Bongards' increase capacity, reduce energy consumption and increase yield.

"Bongards' Creameries teamed up with Pavilion Technologies to help meet our customer demand, as well as to optimize our DPW and stork dryer operation," said Brent Jewett, operations manager, Bon-

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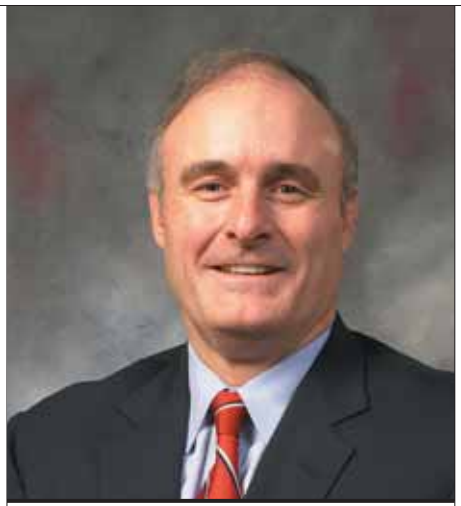
gards' Creameries. "Partnering with Pavilion helps us continue reducing our operating costs, while furthering our commitment to continuously provide our customers with top quality products."

The Pavilion Dairy Industry Solution is based on the Pavilion8 modular software platform to provide modeling, prediction, control and optimization capabilities in one system. Bongards' will leverage the Pavilion solution in its dryer application to help manage product quality consistently closer to product specifications, reduce variability of product quality, and maximize throughput subject to equipment and process constraints.

Pavilion Technologies, A Rockwell Automation Company
www.pavtech.com/dairysolutions

HEBEI PROVINCIAL GOVERNMENT ENTERS PARTNERSHIP

Rockwell Automation has signed a strategic partnership agreement with the Hebei Provincial Development and Reform Commission. The agreement will allow both sides to cooperate on projects that help save energy, reduce emissions, protect the environment and achieve a sustainable economy. First Vice Governor of Hebei province, Fu Zhifang, and Chairman and CEO of Rockwell Automation, Keith Nosbusch, participated in the signing ceremony.



"We believe this forward-thinking strategic partnership with the Hebei provincial government will lead to cleaner, more modern and energy-efficient manufacturing." — Keith Nosbusch, Rockwell Automation Chairman & CEO

"We believe this forward-thinking strategic partnership with the Hebei provincial government will lead to cleaner, more modern and energy-efficient manufacturing and help give the province a leading position in sustainable industrial development," said Nosbusch.

Under the agreement, Rockwell Automation will use its industrial automation technology, control and information solutions to help develop greater manufacturing efficiencies in Hebei's key industries, including metals, oil and gas, power, cement and water treatment.

Additionally, Rockwell Automation will explore opportunities to cooperate with Hebei-area universities, enterprises, and research and design institutes to perform technical research projects and technical training to research, develop and apply automation, information and energy efficiency products.

The first area the partnership will address is energy efficiency. With Hebei's energy consumption ranked second in China and a GDP reaching nearly $200 billion, many opportunities exist for positive results to help the province achieve its sustainability goals and make it a model for other Chinese cities.

Rockwell Automation
www.rockwellautomation.com

>> Encompass Partner Briefs

Metal Systems Becomes Lectrus Corp. MSI, Metal Systems, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, and MSI Equipment Centers will now be known as Lectrus Corp. Lectrus provides metal building production and expertise integrating complex electrical systems for the power, oil and gas and other industrial markets. Since 1968, Metal Systems has provided protection solutions for electrical equipment and personnel for markets that include custom manufactured equipment centers, operator centers and custom electrical enclosures.

Lectrus Corp.
www.rockwellautomation.com/go/p-lectrus

VIDEO MONITORING WHITE PAPER AVAILABLE

The new "Video Process Monitoring" white paper discusses the newest trend in HMI/SCADA: embedding video into an HMI screen, so operators can actually see what is

happening in a process plant, along an assembly line or in remote areas. The paper is written by Steve Rubin, president and CEO of Longwatch, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™.

A video process monitoring system continuously archives live video from multiple cameras around a plant. When an event occurs, the system can provide video from before and during the event, and put it on the HMI screen for the operator to view as many times as desired.

Video clips also can be stored in an historian, logged with time stamps and event information, and used to confirm that process steps were performed properly, help diagnose intermittent problems and train operators.

The white paper describes the hardware and software elements of a video process monitoring system, how it uses the plant's industrial network to transmit video to the control system, and how the video images appear on HMI screens.

Download the white paper at www.longwatch.com/solutions/whitepapers.php.

Longwatch, Inc.
www.rockwellautomation.com/go/p-longwatch

RIVER CONSULTING APPOINTS TWO DIRECTORS

River Consulting, a Rockwell Automation Solution Provider, has appointed Tim Harvey as director of material storage and handling systems. Also, Bryan Krupp has been appointed director of project development

Harvey has more than 30 years of cement and bulk material experience and has been with River for more than a decade. He has designed hundreds of concrete silos and stor-

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age projects throughout his career. He recently led the engineering for the 100,000-ton capacity Houston Cement silos, which stand 186 feet tall and move 1.5 million mtpy.

In his new role, Harvey will lead the silo design practice, as well as provide knowledge and guidance to the structural engineering staff on material handling and storage projects.

Krupp has more than 18 years of experience in electrical design, automation and project management for industrial projects. Krupp's project experience spans numerous industries, and he has served as manager of the Columbus, Ohio electrical department, project manager and lead engineer for numerous projects both domestically and internationally. His background in electrical systems design includes process instrumentation and control, power distribution, control of large induction and synchronous machines, and control system software integration.

In his new role, Krupp will be responsible for development of multi-discipline design and equipment supply projects.

River Consulting
www.rockwellautomation.com/go/p-riverconsulting

ODVA ISSUES 50 DECLARATIONS OF CONFORMITY

ODVA and the Center Verteilte Systeme at the Institute of Ergonomics (CVS@IAF), Manufacturing Systems and Automation of Otto-von-Guericke-Universitäte Magdeburg have issued 50 Declarations of Conformity for EtherNet/IP single products and product families that successfully passed the ODVA conformance test for EtherNet/IP conducted at CVS@IAF.

This number of Declarations of Conformity from European-based EtherNet/IP vendors reflects vendor confidence in the EtherNet/IP technology, the open network standards of ODVA and its conformance testing process, and CVS@IAF as one of ODVA's test service providers.

The goal of the ODVA conformance testing process is to help to ensure, to the greatest extent practicable, that products implementing ODVA technologies and standards comply with the specifications and interoperate in multi-vendor systems. A cornerstone of this process is the passing of the ODVA conformance test at an ODVA authorized test service provider (TSP). ODVA TSPs must meet certain standards, including vendor-independence, neutrality and technical competency in networks and testing practices.

CVS@IAF has been an authorized ODVA TSP for EtherNet/IP since 2004. Since its authorization as an ODVA TSP, CVS@IAF has not only conducted conformance tests on behalf of ODVA for EtherNet/IP products, but also has contributed to the continuous improvement of the ODVA conformance test process through its experience gained in conducting ODVA conformance tests.

TSPs perform conformance tests that are designed, developed and managed by ODVA and conduct the tests in accordance with ODVA test requirements and procedures. The ODVA conformance test for EtherNet/IP products is a composite test comprised of three parts:

- An automated computer test for compliance with The EtherNet/IP Specification, which includes the Common Industrial Protocol (CIP™) and the EtherNet/IP adaptation of CIP.
- A visual inspection of the product for compliance with the physical layer of The EtherNet/IP Specification.
- An interoperability test that exercises the product using prescribed test scenarios designed to demonstrate the successful interoperability of the product in multi-vendor systems.

The vendor of the product may, at its option, observe the test at the TSP. Upon the product's successful completion of the test, the TSP submits the test results to ODVA for review and final approval. Contingent upon passing results from the conformance tests and other requirements of ODVA, ODVA issues a Declaration of Conformity for the product. Declarations of Conformity are posted on ODVA's Web site.

ODVA
www.odva.org

FEELING THE PINCH? NO PROBLEM.

Rockwell Automation Solution Providers are held to high technical and ethical standards so they deliver dependable systems integration services to help you through the tough times.

By Mark Moriarty, Manager Systems Integrator/Solution Provider Program, Rockwell Automation

If you find yourself in the clutches of the unyielding beast of tough economic times, you're not alone. Manufacturers throughout North America, and the world, are trying to figure out how to maintain long-term stability by improving efficiency with minimal resources. So as you review your operations to make improvements, where do you start looking for someone with the technical capabilities and industry knowledge that can help you meet your goals? How do you know who to trust? How do you accomplish this with minimal risk? The good news is that we can put you in touch with dependable companies that can help you escape the grasp of economic challenges.

As part of its PartnerNetwork™, Rockwell Automation has more than 35 systems integrator partners we designate as Solution Providers located throughout North America. Outside of North America, more than 40 are in South America, and we're beginning to identify partners in Europe and the Asia Pacific.

What is a Rockwell Automation Solution Provider?

Solution Providers are best-in-class system integrators who provide industry and applications knowledge. They're established organizations with extensive experience in manufacturing solutions design, implementation, project management and maintenance, and have delivered innovative results to keep manufacturing facilities like yours efficiently running.

It's all about mitigating your risk.

Solution Providers have strong reputations for delivering technology integrated with our solutions. They've been selected into the program because they have a strategic fit that complements the Rockwell Automation delivery strategy: Rockwell Automation delivers solutions to its customers, and Solution Providers complement those solutions.

To help identify the best in class, we go through an evaluation process that includes assessing their financial stability and technical, professional and ethical practices. This evaluation is based on some of the same criteria the Control Systems Integrator Association (CSIA) uses for its certification process (see sidebar on page 16).

What Technology Experiences Do Solution Providers Offer?

Rockwell Automation recognizes the importance of keeping your facilities operating at peak efficiency. Solution Providers have consistently demonstrated their technical competencies in a successful implementation of Rockwell Automation products — especially with our control products. To further help you reduce your risk, we've developed additional competencies to raise the knowledge of the Solution Providers in several manufacturing disciplines:

> Solution Providers are best-in-class system integrators, evaluated on competency.

- **Control Recognized:** Verified implementation of the Rockwell Automation Integrated Architecture™ for improving manufacturing processes.
- **Process Recognized:** Verified industry specific experience in delivering successful plant-wide process automation.
- **Information Recognized:** Verified delivery of manufacturing information solutions using Rockwell Automation FactoryTalk® technologies for planning, scheduling, quality and performance management.

This added dimension allows you to easily find the Solutions Providers that have experience with these technologies, and it provides the Solution Provider the opportunity to differentiate themselves among their peers. To be recognized in any of the disciplines means that the Solution Provider's applications will be routinely audited. A successful audit is measured through an audit of the installation by interviewing the customer. If the customer views the installation a success, then Rockwell Automation will recognize that Solution Provider in that discipline and be promoted accordingly.

Why is That Important to You?

It's all about mitigating your risk. Involving third-party organizations inherently adds risk to your success, and risks can appear in many forms. Ask yourself these questions:

- What third-party organizations can help me achieve my goals?
- Who can help me determine if the goals are achievable?
- How do I know who to trust?
- Do they have industry know-how? Where have they done it before?
- Are they going to be in business long term?
- Are they financially sound?
- Do they have the resources I need? Bandwidth? Scalable resources? Technology?
- What is their project management methodology?
- How do they mitigate third-party risk?

Our goal is to do the legwork for you and provide you with one place to look for all your solution delivery needs. Whether you want to involve a third party for the first time, or you're looking to expand into areas such as information solutions, safety solutions or asset management, Rockwell Automation and its Solution Providers are working to make it easier to find a high-quality systems integrator to help you achieve your goals. □

To learn more, call your local Authorized Allen-Bradley® distributor, or visit www.rockwellautomation.com/partners.

>> Only High Standards Will Do

To earn designation as a Rockwell Automation Solution Provider, systems integrators are evaluated based on many of the same criteria the Control Systems Integrator Association (CSIA) uses for its certification process. The CSIA is an organization of systems integrators that work together to help other systems integrators improve their business practices for the purpose of reducing risk for current and potential customers of their services.

"The CSIA was organized in 1994 and continues to grow in membership every year," explains Ed Diehl, executive director of CSIA. "The organization has demonstrated value to our members through our Systems Integrator Best Practices and Certification. Furthermore, members have gained incredible insight into improving their own businesses by collaborating with their peers; it's one of the only places where system integrators can come together, share ideas and work to improve the industry and their own operations.

"The CSIA is continuously raising the bar; our long term goal is for CSIA Certification to be recognized as the de-facto standard for professionalism and performance in the systems integration business," Diehl adds.

CSIA
www.controlsys.org

Rockwell Automation Solution Providers: Partners in delivering solutions

Best in class systems integrators providing industry and applications expertise in delivering automation and information solutions to manufacturing companies globally.
Proven, trusted, established organizations with extensive experience in design, implementation, project management and maintenance of your automation, control and process solutions.
Our Solution Providers deliver innovative results to keep your facilities operating efficiently.

Rockwell Automation Solution Provider

ABCO Automation, Inc.
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PICK THE RIGHT PARTNER

Discover how Rockwell Automation helps you find the right systems integrators for manufacturing information system projects.

By Rob Windle, Manager, Information Solutions Partnering Program, Rockwell Automation and Dan Hebert, Contributing Writer, The Journal

>> Are you, like many others, trying to integrate the factory floor with enterprise information systems to increase overall total supply chain visibility and agility, but aren't sure where to start and who can make this goal a reality? Are you finding that many of the traditional automation systems integrators aren't experienced at doing this? Are you also finding that the traditional enterprise systems consultants don't really understand how your plant-floor process operates?

Fear not: Rockwell Automation has been working to identify and promote qualified companies with experience in deploying manufacturing production management systems and integrating critical information from the plant floor "up" and throughout the enterprises of companies just like yours.

While more and more companies are looking to achieve greater manufacturing-floor visibility and integration to the greater enterprise, the approach to accomplishing this usually is driven from one of two directions. Which approach is right for your company depends upon the business issue(s) you're addressing.

The first approach typically is focused on delivering functionality that's more finite in scope and originates from the plant floor and can extend **up** to the enterprise application layer. The second approach typically is more comprehensive in scope. It originates from the enterprise layer and extends **down** to the plant floor.

Rockwell Automation has expanded its automation-centric program by extending it into the information level. The Enterprise Solutions Partners adds a new partnering level that recognizes professional services firms that have demonstrated MIS competency.

> The goal is to turn data into information; turn information into strategy; and turn strategy into execution.

The scope of the business issue(s) you want to solve will dictate the class of manufacturing information solution and the types of partners you ultimately choose to help you. Because of this, Rockwell Automation has established a two-pronged partnering solution as part of the Rockwell Automation PartnerNetwork™ (see page 15, "Feeling the Pinch? No Problem") to help guide you through this maze.

Automation & Information Solutions

Automation & Information solutions are the collection, exchange

and analysis of information measured by control systems. In Rockwell Automation parlance, Automation & Information starts at instrumentation and sensors and moves up through programmable automation controllers (PAC) to the human-machine interface (HMI) level. It's bounded at the point in which a definite-purpose information solution is deployed to extend and improve the automation system.

The first skill set needed to operate in this area is a detailed knowledge of the hardware and software products typically used to control and monitor manufacturing facilities. This knowledge allows practitioners to select the right tool in each plant line or work cell.

A second critical skill is a deep understanding of the specific manufacturing processes and operations that need to be controlled and monitored. It's impossible to efficiently control a manufacturing facility by just becoming an automation product specialist — systems integrators also must understand production facilities, industry applications and processes.

Enterprise Solutions

Enterprise solutions typically are approached from the enterprise resource planning (ERP) level and extend down to the plant floor — usually by deploying production management or other similar and more comprehensive types of applications.

In a typical plant, information is collected by PACs and HMIs. These communicate this information to and from manufacturing execution system-level (MES) platforms and ERP systems. Examples of MES platforms include Computerized Maintenance Management Systems (CMMS), Laboratory Information Management Systems (LIMS), data historians, production scheduling systems and many others. Popular ERP systems include SAP, Oracle and other smaller brands.

The skill sets needed to handle and make sense out of information collected by automation systems vary greatly from traditional plant floor automation experience. To implement systems at the enterprise solution level, the potential partner must understand IT systems, plant-floor automation systems, and the business drivers for manufacturing plants and enterprises. Much of the implementation is integrating a larger system into an existing ERP system.

> All program members have been thoroughly vetted by Rockwell Automation.

Information Solutions Partnering

Because two ways exist to solve these applications, Rockwell Automation has improved and extended its traditional Systems Integrator Program to assist you in finding the right partner. We do this by approving potential partners to establish their competency. To become a recognized participant in either tier of the program, a professional services firm must comply with certain criteria.

First, the firm must have the required number of certified employees. Employees can build competency through training and work experience, and then demonstrate this competency by passing certification exams in the required areas of experience.

Second, the firm must have successfully implemented projects for manufacturers in their claimed areas of experience (product and industry). Rockwell Automation interviews manufacturing firms after projects are completed to make sure they're satisfied with the firm's competency and professional services.

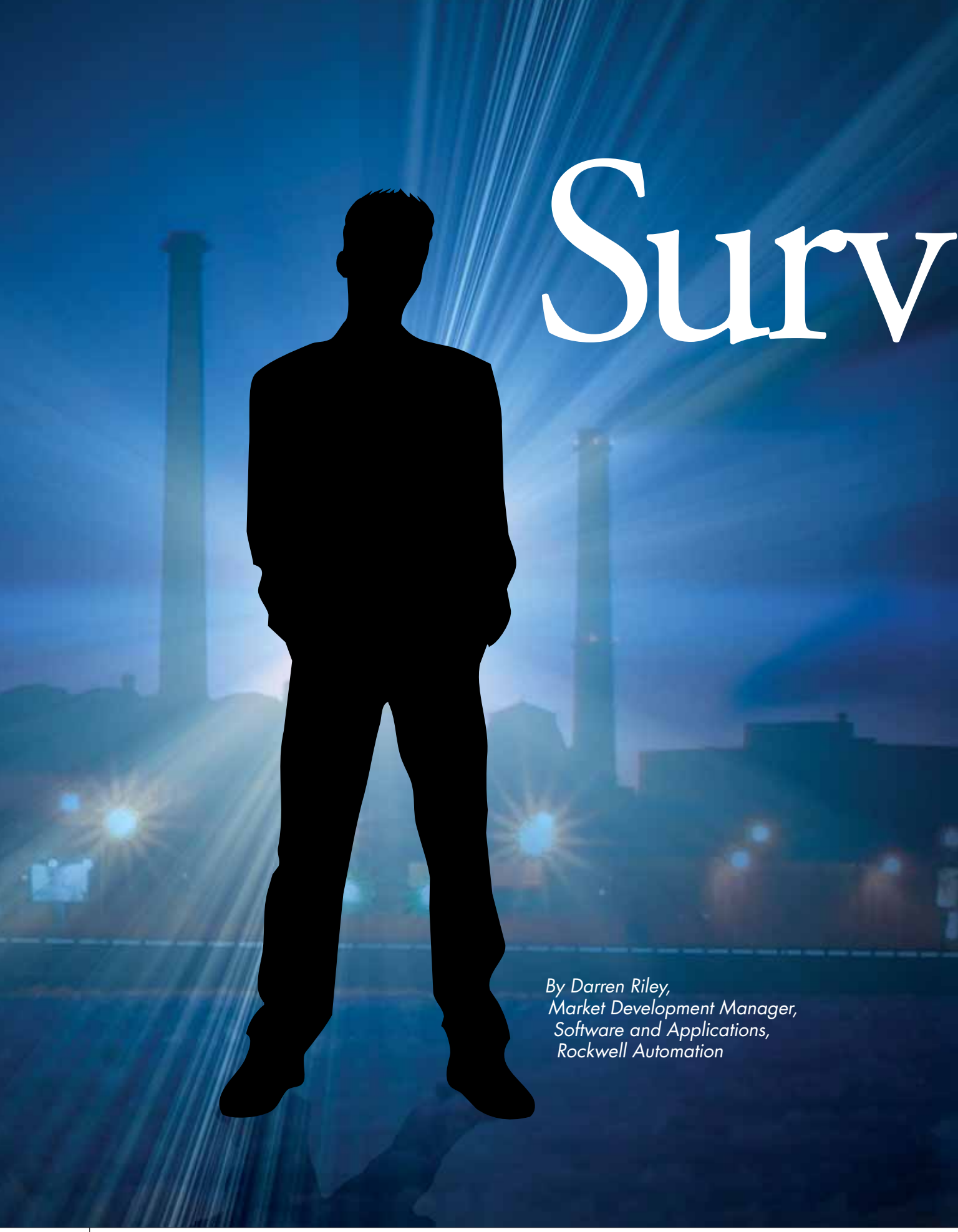
The result is that all program members have been carefully vetted by Rockwell Automation. This saves you time and money in your selection process. It also lowers your risk because you know that members of the program have had prior success in the specific technical areas encompassed by your project.

PartnerNetwork Hard at Work for You

Rockwell Automation has taken all of the things you have come to expect about our automation-centric program and added further value by improving the original program to extend into the information level. The addition of the Enterprise Solutions Partners adds a new partnering level that recognizes professional services firms that have demonstrated manufacturing information system (MIS) competency. This delineation cuts your selection time and costs, and it helps to reduce your risks during the critical stage of project execution. □

Contact your local Rockwell Automation representative if you need help in selecting the best partner for your next project.

Rockwell Automation PartnerNetwork
www.rockwellautomation.com/partners



Surv

By Darren Riley,
Market Development Manager,
Software and Applications,
Rockwell Automation

ive and Shine

Accurate performance management helps you use plant-floor data to create a productivity phenomenon that boosts your bottom line.

>> Manufacturers across all industry sectors are embracing real-time performance management as a way to improve flexibility and profitability, while coping with the reduction of labor and the burden of monitoring assets. This is intensifying the need for companies to make key performance indicators (KPI) visible across all levels of the operation to help provide that processes are operating correctly and assets are being effectively utilized.

While many companies have enormous potential for improving plant performance, they're challenged with collecting, organizing and analyzing the data needed to identify areas for improvement. By applying performance management solutions, companies can simplify the information-gathering process.

Combining advanced visualization, analysis and reporting tools with engineering experience, these solutions are designed to help companies shift from a repair-focused asset management strategy to a plan that's reliability focused. This helps reduce overall maintenance costs while transforming production data into actionable information that drives continuous improvement.

Accurate Insight

One performance management metric that delivers powerful results is overall equipment effectiveness (OEE). OEE measures the most common and costly sources of manufacturing productivity loss from availability, performance and quality. It provides a composite view of anomalous activity and issues to permit staff a prioritizing framework for reducing inefficiencies and driving improvements.

>> Web-based HMI: It's Everywhere You Want To Go

By Mark Hobbs, Product Manager, Rockwell Automation

The world's workforce is more mobile than ever. The number of mobile workers is expected to continue climbing sharply, reaching 1 billion by 2011, according to predictions from market-intelligence firm IDC. The flexibility of today's technology means workers in all industries can access e-mail and the Internet from almost anywhere. Why should access to plant-floor data be any different?

Rich Internet-application technology is quickly evolving. New Web-based human-machine interface (HMI) capabilities are shattering previous notions about how and where HMI can be used. Manufacturing staff from the shop floor to the top office now can benefit from the freedom that on-demand access to plant operations data offers.

Advanced Web-based HMI software gives you and other managers the ability to remotely access critical visualization displays and alarms of any part of the plant in real time. Managers can monitor production and equipment status from anywhere.

The ability to view and use real-time data and make critical production decisions without the need to be physically present at the plant helps improve speed and efficiency. For production managers, providing coworkers access to critical information from any location saves significant time compared to manual collection and routing. Users will quickly discover that while gathering information is valuable, the ability to share it quicker and easier is even more powerful.

With Web-based HMI, you're accessing visualization screens from a home PC or hand-held device, so you probably expect your display to be one-dimensional, right? Not true. The latest Web-based HMI software uses advanced visualization technology, which means you'll get crisp, sharp images and a rich user experience.

Unlike many older Web-based HMI software solutions, the FactoryTalk® ViewPoint Web-based HMI software from Rockwell Automation, for example, leverages familiar features of the most popular browsers such as Internet Explorer. This includes hyperlinks, navigational functionality and favorites. And, a thin-client configuration means there's no client software to install or maintain.

Also, this new Web-based HMI doesn't depend on terminal services; the server is a smaller piece of software that uses less bandwidth and fewer system resources. Maintaining this small footprint allows users to run on desktop computers and on HMI displays.

Security is a major concern with any Web-based application. HMI software is no exception. Software should provide secure access to Web applications and site administration. Administrators should be able to provide different levels of access depending on use, and they should be able to easily enable and disable security.

Mobility is increasingly important, and Web-enabled access to plant-floor systems is an important tool to help meet the requirements of today's remote users. Cutting-edge visualization solutions make it easier than ever for managers, OEMs and system integrators to view and manage their production operations using nothing more than a Web browser.

Rockwell Automation Web-Enabled HMI
http://discover.rockwellautomation.com/go/webhmi

One driver for using automated OEE technology is measuring and comparing the performance of different plants and the assets operating within them.

For example, many software packages use an OEE model to measure or compare performance of plants, lines, machines and even production teams within a manufacturing enterprise. The OEE model yields a single-performance rating to help plant personnel determine how a particular manufacturing activity or asset is performing, while also providing detailed unit and machine event history to document performance.

The most effective OEE systems "intelligently" report the status of individual production line components, such as the correlation of a downtime event with the time of the day; the specific operator running a machine; or a particular equipment setup procedure. This information, as opposed to a simple timer to monitor downtime, provides "actionable intelligence" to enable proactive adjustments, rather than merely serving as an alarm to report a stoppage. In other words, the software adds the "why" to the "what, when and how often."

Delivering OEE calculations and metrics to plant personnel doesn't automatically guarantee uptime performance to improve or scrap rates to reduce. The notification of poor performance must be first be noted and then acted upon by taking the proper corrective action. A systematic approach to continuous improvement and a management culture supportive of adaptive change permits the highest levels

of improvement. Best-in-class results only can be realized through a diligent approach to operational improvement using metrics such as OEE.

A Targeted Approach

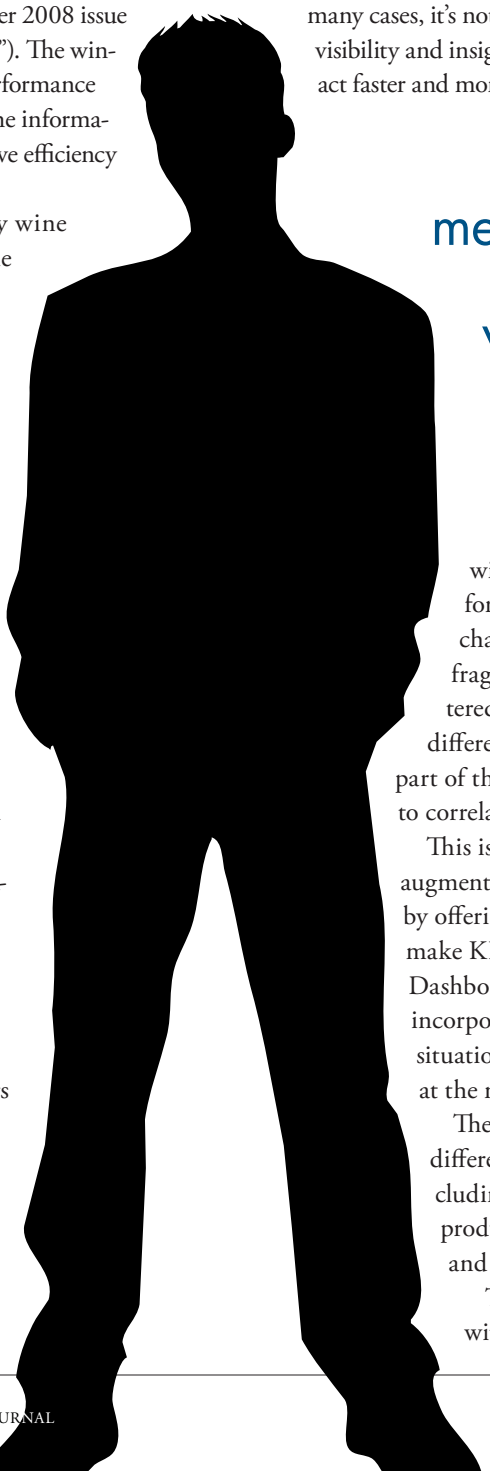
Achieving leading-class OEE scores has been shown to help improve bottom line results in a range of industries. For Clos du Bois, installing OEE software to evaluate the performance of its critical production assets helped the winery improve efficiency by 20% (see page 46, October 2008 issue of *The Journal*, "From Vine to Bottle"). The winery was able to leverage advanced performance management techniques and real-time information from its own processes to improve efficiency and optimize production.

Located in the Sonoma County wine region in Northern California, the winery wanted to cut costs and boost production.

A key area of focus was the high-speed bottling line because it had the greatest influence on overall production and yield. The line was experiencing unplanned bottlenecks and stoppages, and running at a mere 65% efficiency.

However, without a clear picture of what was actually happening, it was difficult to identify the areas that needed improvement. To make any improvement, Clos du Bois first needed to understand where the problems were and what was causing them.

The winery partnered with Rockwell Automation for a sophisticated data acquisition system that could deliver accurate, real-time information to help management identify the cause of problems and drive continuous improvement. Operators now use FactoryTalk® Metrics to evaluate the performance of critical production assets, while FactoryTalk Historian is used to collect, analyze and report production data through Web-based reporting via the company's intranet.



Customized reports are displayed on PCs off the shop floor. Management can view general OEE calculations by work cell, downtime for each machine, quality data, changeover times, and specific events that cause line stoppages, such as a jammed bottle or spilled product.

Visibility is Key

In their quest to drive revenue and cut costs, companies have invested heavily in data collection technologies. Therefore, in many cases, it's not more automation that's needed, but better visibility and insight into manufacturing so operators can react faster and more intelligently to the data they're receiving.

As a real-time measurement system, OEE provides a window to analyze out-of-the-ordinary issues.

However, empowering decision-makers with timely, clear and context-rich information presents a number of technical challenges. First, the information often is fragmented, residing in multiple systems scattered across the enterprise. At the same time, different proprietary user interfaces present only part of the picture, and make it extremely difficult to correlate and interpret data.

This is where collaborative dashboards are augmenting performance improvement efforts by offering a simple and more graphical way to make KPIs visible throughout the enterprise. Dashboards provide a window into the process by incorporating performance metrics, as well as the situational display of manufacturing information at the machine, line, plant and enterprise level.

These measurements can focus on many different facets of manufacturing operations, including how effectively the company manages production, equipment use, material use, waste and output and OEE.

The role-based reporting engine integrates with existing control systems and business

>> How Nestlé Reaped the Data Harvest

By Keith McPherson, Director of Market Development, Rockwell Software

The swift rise of information technology has brought many blessings to manufacturers. However, the proliferation also has created barriers that block communication between different operational groups. As manufacturers add to their arsenal of information-gathering technologies, they risk creating an environment of patchwork systems, each storing its own specific data. That information typically is only accessed by the particular user or user group monitoring a piece of equipment.

Also, functions such as alarms or real-time process values are duplicated in each silo, creating challenges for users who need to access or consolidate information from multiple areas.

Fortunately, manufacturers have access to tools that automatically find, correlate and distribute information critical for smart business decision-making — even for users who have a variety of systems.

This was precisely the situation facing Nestlé, one of the world's largest producers of food, beverage and pharmaceutical products. As the company expanded the number of process operations at one site, management determined it needed a more powerful decision support and visibility system that could provide employees with a single point of access to data from multiple devices across the facility.

The system also would need to organize the information so employees from different departments of the company could read and understand it. And, the system had to provide advanced analyses and Web-reporting capabilities.

Nestlé chose to implement FactoryTalk® VantagePoint EMI, an enterprise manufacturing intelligence (EMI) application that leverages technology Rockwell Automation acquired from Incuity Software. The application helps correlate data from different sources so decision-makers across the enterprise can see diverse views and new relationships within a Web browser. The reports, key performance indicators (KPI) and operational metrics then can be assembled quickly into dashboards to help management measure performance across the facility.

Additionally, Nestlé leverages the FactoryTalk VantagePoint EMI trending tool to compare batch runs, fine-tune processes and note the effects of any variations introduced as the tool hones in on various phases of batch-production processes. This is useful because the company standardizes the processes behind each product once it has arrived at the optimal recipe and performance level.

For example, in its ready-to-drink beverage operations, engineers developed a new formulation of flavored milk. Then they established an end-to-end series of operations for factories that would produce the product. Those standards include the formula for the drink, and exact procedures for equipment operation and specific data points that must be monitored for quality control and compliance. The standards even address how the data should be displayed on the Web. Now, when the company expands to another factory, it can replicate the exact process.

Rockwell Automation FactoryTalk VantagePoint
www.rockwellautomation.com/go/tjftvantagepoint

applications. It makes data in these systems visible and actionable by presenting a coherent picture of the production operation through an Internet browser and PC interfaces.

The dashboard provides the foundation for a range of manufacturing analytics including real-time executive dashboards, automated production reports, KPI monitoring and alerts, downtime analysis and reports, and process verification and optimization.

The ability of dashboards to display metrics in graphic representations contributes to quicker actions by helping users better understand how to respond to the data.

Likewise, calculations representing operational efficiency metrics are easily applied for comparison to historic measures. These comparisons allow identification of deviations for further analysis and can be complemented by alerting based on thresholds. This in-depth insight provides unprecedented operational visibility and many companies claim millions of dollars of value from it.

For example, Martinrea International, a tier one automotive supplier, wanted to implement a more efficient data collection and reporting system that would help it to respond more effectively to changing market demands. At its facility in Hopkinsville, Ky., the company produces a variety of automotive components, including chassis modules, frame assemblies and steel stampings. With an output volume averaging 10,000 to 13,000 parts per day, Martinrea must anticipate volume increase demands from top automotive manufacturers such as Ford, General Motors and Chrysler.

"We had manual paperwork sheets for everything, which required double and triple entry of data across the company — increasing costs and significantly reducing productivity," says Darren Allison, manager of information technology for Martinrea's Hopkinsville plant.

Seamless Integration and Web-Based Reporting

To meet its needs, the company implemented a comprehensive plant-wide reporting solution. Data coming from 150 different operations, 200 work cells and 180 plant-level controllers is now managed using FactoryTalk Metrics. With its Web-based reporting function and flexible reporting design, the dashboard software provides a standard tool set for generating reports and integrating with Martinrea's operating system, which allows people to view plant-floor information from multiple offices.

Martinrea management uses the data to improve production processes and now can quickly respond to the demands of its automotive manufacturing customers with the ability to gather and report production data to them on short notice.

"In effect, we've established a common template for plant performance reporting that maximizes our productivity and efficiency," Allison says. "We have less downtime, and we're extremely pleased with the products and support we've received. Each new application we add to the solution is seamlessly integrated with our existing infrastructure, and that is exactly what we need to continue to succeed in the automotive marketplace."

> "In effect, we've established a common template for plant performance reporting that maximizes our productivity and efficiency."
>
> — Darren Allison, Manager of Information Technology, Martinrea International's Hopkinsville Plant

Gaining an Edge

Some companies are implementing dashboards and portal technology to improve interactions with suppliers and customers. They're doing this by establishing a customer Web portal for all order entry and tracking — a portal that exchanges information directly with the factory floor. Integration benefits extend into customer service as well, with the ability to connect manufacturing to customer relationship management (CRM) systems accessed by sales people and supplier networks.

Real-time knowledge sharing in a way that helps both manufacturer and supplier means higher sales, while offering customers expanded choices and improved responsiveness to market demands.

Advanced performance management technologies are helping manufacturers across all industry sectors achieve demonstrable value from baselining, visualizing and comparing plant performance to historic measures. Those companies that capitalize on these technologies will be the ones best positioned to reap continuous performance improvements and gain a substantial competitive advantage now and into the future. □

Rockwell Automation Information Solutions
www.rockwellautomation.com/go/performance

Be Smart With Your Intelligence

Learn the difference between business intelligence and enterprise manufacturing intelligence, and discover why they're critical for managing manufacturing operations.

By Doug Lawson, Vice President, Incuity Software, a Rockwell Automation Company

Many people are confused about the differences between business intelligence (BI) and enterprise manufacturing intelligence (EMI) systems. Although both terms refer to gathering and analyzing information from multiple applications, their deployments are quite different.

BI usually is involved with transaction-oriented business applications, such as enterprise resource planning (ERP), supply chain management (SCM), finance and enterprise asset management (EAM). BI solutions are critical for helping management to better run a company, but they can't deal with time-series data from the plant floor.

As a result, BI solutions don't provide all the intelligence needed to manage manufacturing operations. Generally, they report against results obtained over a reporting cycle — last month, last quarter, etc.

EMI applications also aggregate information from multiple applications and maintain key relationships between different data elements within them. However, unlike BI solutions that are targeted toward enterprise applications, traditional EMI systems focus on plant-floor production data.

EMI applications can connect to virtually any data source in manufacturing and at the enterprise level. They allow information to be generated from data derived across all of these systems. For example, batch or shift data from an enterprise system might be used as context for a manufacturing report to management.

True Business Intelligence

Effective EMI systems now can link the transactional database environment of enterprise business systems, relational data from maintenance and quality systems, and the object-oriented, time-series world of automation and control systems in a single, coherent environment. This provides context for plant-floor data, so that people at any level in a company — from plant floor to executive offices — can make better business decisions.

So, when the BI system reports that a revenue goal wasn't met, an EMI report gives line personnel and management the tools they need to drill down and determine the cause of the problem. In addition, the EMI system, using the business data as context, could have provided an early warning that a set of goals might not be attained under current operating conditions.

EMI software users can leverage actionable information to help personnel recognize opportunities and problems earlier, react swiftly and easily communicate the issues. This helps guide decision-making to improve bottom-line profitability. Staff is empowered to create content from known valid data, and IT departments don't have to worry about deploying client-side software on every PC in the company.

EMI software users can leverage actionable information to help personnel recognize opportunities and problems earlier.

Whichever data source owns the data remains its owner — no new master database is created. EMI software can recognize what information is located in which data source and interacts with it whenever users need.

Presentation and Information Analysis Made Simple

EMI software now can provide users with access to intelligent reports that offer alert detection through live data connections. It can automatically drive user attention toward exception conditions, missed targets and plan deviations.

All of this information arrives as dashboards, reports and charts via standard browsers such as Internet Explorer. People will find information quickly and understand the production issues in the context in which they need to use the information.

Because the software's rich database views and data transformations are usable with existing data-warehouse and data-mining software products, people can continually evaluate real-time production information to monitor key performance indicators (KPI). This will help them better understand events surrounding issues such as product quality or machine downtime.

Now that's a true business intelligence system for the manufacturing industries. □

Rockwell Automation Information Solutions
www.rockwellautomation.com/go/performance

>> Business Intelligence That Makes Sense

FactoryTalk® VantagePoint from Rockwell Automation seamlessly links the enterprise business systems with production information. The solution relies on a Unified Production Model that provides users with a logical view of their operations. The model allows users to build representations of their businesses using real-world terminology instead of talking about tag names, protocols and SQL statements. Users can create portable content that they can look at, visualize and report on independently of the underlying data infrastructure.

The software allows users to interact with existing model definitions of plants, production lines and equipment that are contained in an enterprise database. They use data mapping to manifest that information in the Incuity model.

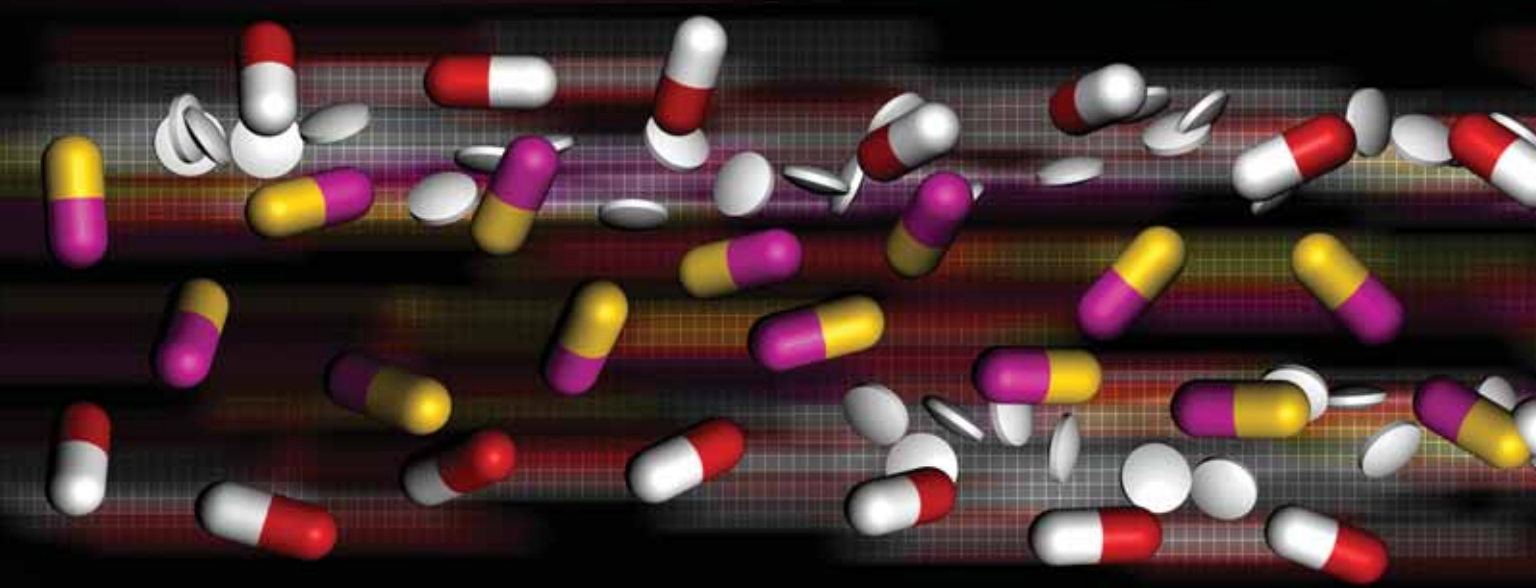
In addition, the solution provides multi-level support for dashboards, including preconfigured dashboards featuring common tools with which people already are familiar — gauges, sliders, switches and other elements — and a dashboard editor that helps people easily build complex, interactive dashboards.

Extensive security features, which are mandatory for a system that can connect to so many different data sources, allow users to impose security on any item in the model and specify exactly who is allowed to read, write, access or change any of the data coming in from those different data sources.

For more information, visit http://discover.rockwellautomation.com/go/emi.

BRIDGING THE

Wyeth Pharmaceutical shares insights and expectations from its



By Jim Ricigliano, Director of Process Excellence, Wyeth Pharmaceuticals, and Bob Honor, Vice President, Information Solutions,

Life sciences companies seeking to achieve world-class performance can view the pharmaceutical industry's adoption of information technology (IT) at the production operations level, although still in the early stages, as a highly relevant precursor of changes to come.

In our industry, the original impetus took the form of regulatory pressure. Mandated compliance with government quality expectations helped drive the adoption of systems that eased the pain and simultaneously increased the accuracy, reliability and speed of retrieving product genealogy for batch or assembly operations (EBR/DHR) as well as validating process rigor (CFR21 part 11).

Ironically, the same impetus for improvement in our industry may hinder additional advancements due to validation costs associated with changes in production-related processes.

Digitizing manual and paper-based processes introduces new levels of consistency, visibility and reliability to operations. It institutionalizes business rules and tribal knowledge. This transforms the art of production into a science that can be measured, evaluated and consistently improved.

However, when you transition a workforce from paper batch to electronic records, training and change management play critical roles. Typically, everyone on the shop floor has varying degrees of computer skills. Initially conducting a basic computer skills assessment goes a long way in determining the readiness of your workforce so you can follow up with proper computer remediation training.

Payoff: Tactical or Strategic?

Demonstrating consistent process control has long been a challenge issued by regulatory organizations to pharma-

DIGITAL DIVIDE

vision for establishing IT-enabled manufacturing on an enterprise scale.

Rockwell Automation

ceutical manufacturing sites. The ability to view system-generated control charts that show processes working comfortably within prescribed operating limits adds another level of consistency.

Process consistency also has a direct impact on production cycle time. Paper-based processes often are riddled with batch record errors, causing manufacturing teams to regularly grapple with manufacturing deviations. As a result, production is slowed or halted. In our pre-digitized world, we planned for this inefficiency, scheduling 80 batches to make 90. In the post-digitized world, our confidence interval for producing "golden" batches is closer to 1%.

Production productivity, consistency and reliability typical are success measures when justifying an investment in plant-wide IT. Manufacturing IT finally is viewed as a strategic asset that impacts the businesses' ability to respond quickly and efficiently to change, to support corporate initiatives and to execute innovation.

This means bringing an enterprise perspective to your game — and gaining a better understanding of strategic implications that a more connected enterprise infers.

For some pharmaceutical manufacturers, this has created the impetus for organizational, process and policy convergence of corporate IT and manufacturing departments. It's vital for both perspectives to have input into technology investments, architectures and policies that meet mission-critical requirements and still scale on a global basis.

It's also critical to involve senior management at the highest levels. Investing in enterprise-wide production and performance management applications, such as manufacturing execution systems (MES), is widely viewed as mis-

sion critical, but these systems introduce radical process change. Executive sponsorship and change management are common threads within successful manufacturing IT strategies.

Control concepts at the heart of such systems, such as adjusting for product potency, process verification or digital signatures, also represent strategic risk management opportunities that warrant senior management visibility and support.

Convergence Creates Synergies

Improving information flow in your manufacturing enterprise is like the impact of a healthy circulatory system on human performance. Production operations are the heart of a manufacturing enterprise, but it's your ability to reliably, accurately and efficiently circulate that information among business and production systems that helps you react faster and enjoy stronger control over desired outcomes.

One of the most immediate benefits of blending IT and manufacturing perspectives is developing a shared vision for what's possible when creating a modern manufacturing IT architecture. Consider that most manufacturing teams are so focused on getting product out the door that they typically don't have time to research new manufacturing techniques or technologies via seminars and conferences.

This is where working closely with IT has added significant value at Wyeth. The IT team helped manufacturing management understand how IT infrastructure can support mission-critical production systems, and worked with us to answer an array of questions. What's a segmented network, and why is it important? What are the pros and cons of wired versus wireless access points? What's a SAN? What data is being backed up and how often? Are you conducting stress testing or disaster recovery planning? How long will it take to recover?

These are just a few of the technology "gotchas" that manufacturing teams need to understand to create effective and scalable support for an IT-intensive production system.

Our IT brethren must understand what high-availability means to manufacturing. What are the critical manufacturing parameters, and how must that data be managed, collected and protected? How is this data being used? Where in the process is data being entered, stored and retrieved?

Convergence creates value by heightening each organization's understanding of the other's area. By establishing common ground, we enable more productive discussion of manufacturing technology issues, opportunities and benefits.

Drawing the "Turf" Lines

Master data management (MDM) is a complex topic that needs to reflect the assigned roles and responsibilities of both the people and systems involved in your production process. MDM is an essential element in your manufacturing IT strategy that helps guide how plant and enterprise systems should interact.

This becomes increasingly important as business or supply chain systems such as enterprise resource planning (ERP) are interfaced into execution, quality or other plant-level production management systems to aggregate and extract key production data for planning and reporting.

Bringing your production operations into the digital age isn't easy, and certainly not a task to take on without the help of qualified and trusted partners.

Our experience at Wyeth provides one example of a successful approach to dividing up systems "turf":

- **ERP:** Materials resource planning (MRP) processes, bill of material, final usage decision, inventory control, order genealogy, and production order generation.
- **MES:** manufacturing process control, master batch record, log books, and process data retention.
- **Laboratory Information Management Systems (LIMS):** lab results, stability studies, retains, material potency, batch disposition, and recommendation based on lab results.

At Wyeth, we found that it was easier to define these roles and responsibilities for our strategic/enterprise systems once we appointed system owners or champions and moved away from a management-by-committee format. This created a place for the "buck to stop" for each strategic/enterprise system. It doesn't discourage debate, however it ensures that a clear line of authority exists for making a decision on the direction and vision for a given strategic/enterprise system.

We recognize that changing business needs may dictate a review of

these "lines of demarcation," so these system owners or champions meet on a periodic basis to challenge status quo.

Information is the Next Industrial Revolution

Like many other industries, pharmaceutical manufacturers are experiencing the impact of macro trends that are significantly changing the manufacturing landscape. A recent flurry of consumer product contamination issues illustrates the need for better visibility across supply-chain networks.

Expectations are changing. Our customers, partners, suppliers and even the government expect more when it comes to the velocity, ease and accuracy of our business processes. Technology is changing so rapidly that companies that apply it wisely in their business processes can realize a true competitive edge.

Pharmaceutical manufacturing operations are being managed as a strategic business asset with all that bestows, including investment in appropriate technologies to create a "closed-loop" information architecture on an enterprise scale. The implications are many, including rejecting the traditionally insular view associated with developing and deploying plant-level information systems that some manufacturing management teams hold.

Just as no world-class company would consider deploying a home-grown ERP application today, the systems that manage your manufacturing process should be governed, deployed and maintained with similar IT rigor. Evaluate your software partners wisely for that elusive combination of domain expertise, market commitment and resource depth. Wyeth's partner of choice for plant-wide information software and automation control systems is Rockwell Automation, a choice based on its alignment with Wyeth's commercial off-the-shelf (COTS) software philosophy, global support needs and scope of functionality.

Bringing your production operations into the digital age isn't easy, but the journey is exciting and rewarding. Don't take on the task without the help of qualified and trusted partners.

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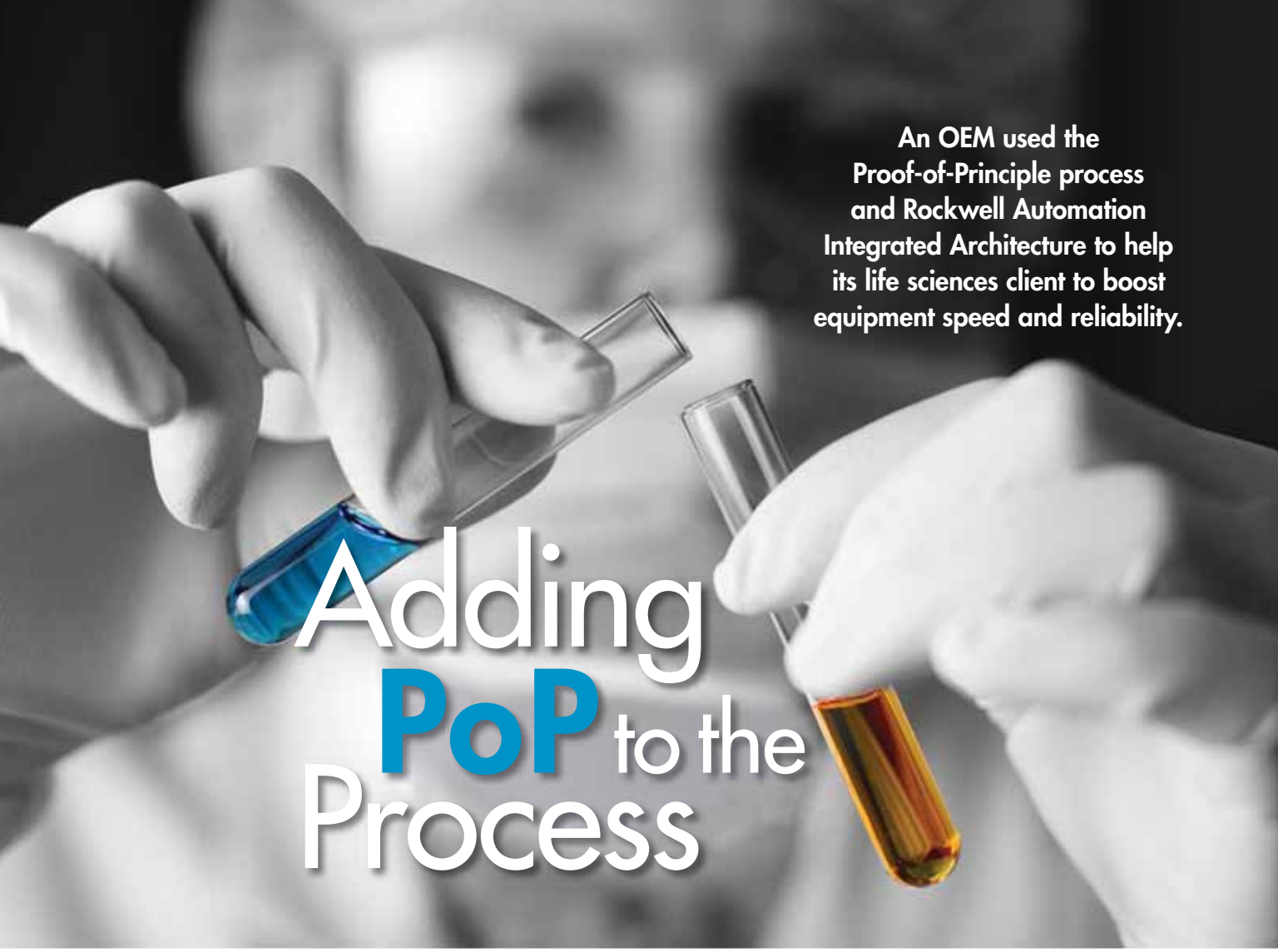


An OEM used the Proof-of-Principle process and Rockwell Automation Integrated Architecture to help its life sciences client to boost equipment speed and reliability.

Adding PoP to the Process

Despite a wealth of experience designing and building systems for a range of industries, leaders at Remmele Engineering, New Brighton, Minn., believed the company could differentiate itself in the life science market. This could be accomplished by using a better mechanism for addressing potential design and operational issues to mitigate the risk of machine failure and regulatory noncompliance. They also recognized the increasing demand for data integrity and security.

To meet these demands, Remmele, which offers precision machining and manufacturing engineering services, began to use a Proof-of-Principle (PoP) process to address potential design and operation issues, mitigating risk and buffering development costs for its clients. The company also partnered with Rockwell Automation to supply technology and technical support. The Rockwell Automation OEM team of technical consultants, engineers and project managers helps Remmele with successful implementation of automation technology to decrease the total cost of engineering and build a competitive edge.

This partnership and process recently was put to the test when a life sciences manufacturer asked Remmele to boost the speed and reliability of its ultrasonic welding equipment. Using solutions based on the Rockwell Automation Integrated Architecture™, Remmele helped the client incorporate advanced technologies and boost equipment speed and reliability while minimizing project risk.

Adding a Little PoP

The ultrasonic welding system involved three webs that needed to be precisely registered together, then ultrasonically welded, cut, stacked and positioned into a cartridge. Each completed cartridge contains a set of 50 in-vitro diagnostic test slides with a specific chemical signature. Multiple cartridges with different testing properties are loaded into the machine, and slides are individually dispensed according to the specific set of tests required. This creates automated, easily customized results from a single patient sample.

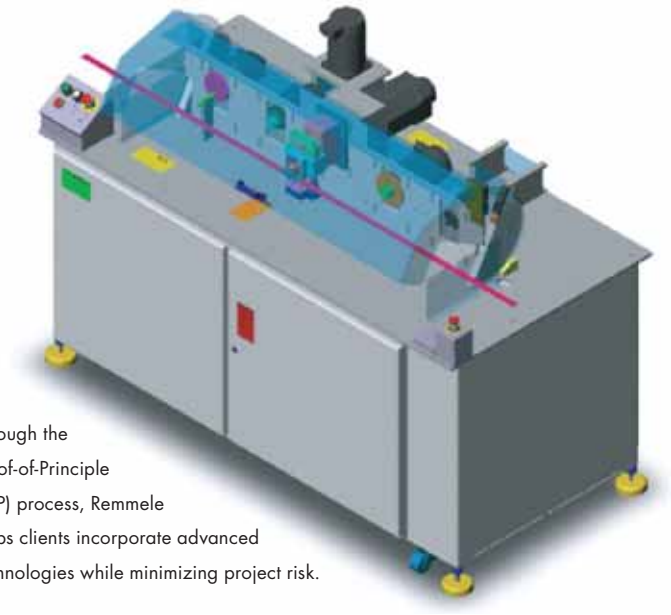
"The cartridges require accurate labeling and tracking for compliance to medical industry standards, and the

machine needed to be designed for fast, easy change-out of empty cartridges or alternative chemical signatures," explains Terry Johnson, vice president and general manager of Remmele's Automation Division.

"Because our client was asking for a dramatic increase in the speed of the equipment, we proposed a PoP process that would proactively address a number of potential risks while accommodating the increased speed requirements," he says.

Remmele personnel had some doubt about whether the speeds the client wanted to achieve could be met with a PoP. Remmele developed a PoP design leveraging the Rockwell Automation Integrated Architecture, a fully integrated, scalable solution for a full range of control and information disciplines. The Integrated Architecture encompasses both automation and information segments with the Logix Control Platform and the FactoryTalk® integrated production and performance suite.

The solution included an Allen-Bradley® ControlLogix® programmable automation controller (PAC) with Kinetix® Integrated Motion, and FactoryTalk View human-machine interface (HMI) software. The seamless integration capability of these three technologies — control, motion and visualization — helped Remmele meet the client's performance and throughput demands.



Through the Proof-of-Principle (PoP) process, Remmele helps clients incorporate advanced technologies while minimizing project risk.

> Remmele Engineering can now offer its clients an entirely new level of control system capabilities for throughput, efficiency and reliability.

Kinetix Motion Control leverages the Logix Control Platform to reduce programming time and improve information flow between components. Other solutions require a dedicated controller for discrete and I/O control, and another for motion control — each with its own software package, hardwiring, communications and synchronization logic. The Logix Control Platform provides a single integrated system.

The single programming environment in Rockwell Software® RSLogix™ 5000, a common tag-based programming structure, eliminates programming and synchronizing two separate controllers for every machine function. One address makes programs easier to read and access. Tag names can be shared between controller programs, HMI and other applications by defining each tag only once.

The Perfect Blend

Effective blending of design and technology is another way Remmele mitigates risk, reduces cost and produces better equipment for its clients. HMI technology plays a critical role in the efficient flow of work and data through the system, and can have a profound impact on machine operation.

Remmele's contextual process achieves much of the HMI design before a design engineer ever puts fingers to keyboard. Remmele engineers interview machine operators to determine the "how and why" of every interaction the operator makes with the machine. What controls does the operator need to access? When do they need to access them? How does each human-machine interaction fit into the overall flow of the operator's procedure?

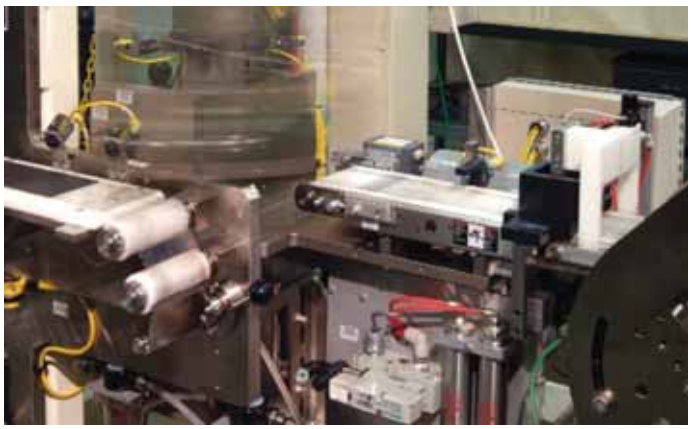
Rockwell Automation used Remmele's contextual information to create compliant, secure, ergonomic and highly specialized multi-disciplined functionality with the Logix Control Platform. Additionally, using the FactoryTalk Transaction Manager, FactoryTalk Historian, FactoryTalk Metrics and FactoryTalk Scheduler, Rockwell Automation worked with Remmele to bridge the gap between the HMI and machine control system through the manufacturing execution system (MES) and into the enterprise business system. This helped to create smooth, accurate data flow from the plant floor to anywhere in the world.

The Rockwell Automation information architecture is 21 CFR Part 11 compliance-ready. This is a regulatory specification that calls for electronic data records and signatures through every stage of manufacturing.

New Level of Control

Because of the strong partnership with Rockwell Automation and a rigorous PoP process, Remmele Engineering now can offer its clients a new level of control system capabilities for throughput, efficiency and reliability. For example, the Rockwell Automation Integrated Architecture helped Remmele to boost throughput on one welding system from 200 ppm to 900 ppm — an increase of more than 300%.

Also, standardizing on a common visualization platform through FactoryTalk View, Remmele provides customers



Integration of standard components provides Remmele's clients with cost-effective, flexible solutions. The company increased throughput on one welding system by more than 300%.

with the contextual design concepts customers need. One client called Remmele's innovative HMI design approach "astounding," reporting a 96% reduction in causes of human error on its assembly machine.

"Our customers have very unique needs that constantly push the boundaries of control and information technology, and we need a partner that can deliver the goods and has a clear understanding of the end result," says Johnson. "An integral part of our success is based on relationships with our key suppliers, such as Rockwell Automation."

Internally, Remmele Engineering has realized an 8% to 12% cost reduction using the Rockwell Automation Integrated Architecture. These reductions are largely the result of superior interoperability and scalability of the Logix Control Platform, which helps minimize design and engineering time.

Additional cost savings are achieved through reductions in time required to program and configure operator interfaces and integrate the machine's motion control elements. The technical support and engineering expertise Rockwell Automation provided also helps reduce training and documentation requirements needed to support a system. □

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CUT ENERGY COSTS FOR PNEUMATICS

New field devices for monitoring pneumatic systems let users measure compressed air consumption for comprehensive diagnostic and cost control.

By Dr. Christian Boehm, Manager, Solution Engineering Center, Festo Corp., and Sean Schmelzer, Power & Energy Management Products, Rockwell Automation

>> Energy management and accounting systems can play a key role in reducing energy consumption and carbon emissions. Although compressed air is an expensive energy carrier that's used in nearly every plant, energy management and accounting systems haven't completely covered compressed air systems in the past — primarily because of the lack of appropriate devices to monitor compressed air consumption of plant areas and pneumatic machines or applications.

However, with new field devices to monitor pneumatic systems, users can easily measure, track and add to existing energy and accounting monitoring solutions the generation, distribution and consumption of compressed air. This provides comprehensive analysis, cost control, diagnostic control and consumption control.

Cutting Costs of Pneumatic Drive Use

Pneumatic drives are the preferred drive technology for many applications because of their numerous advantages compared to electrical and hydraulic counterparts. Pneumatic drive technology offers overload resistance, speed, long service life, ease of assembly, reliability and safety.

The advantages of pneumatic drive technology suggest that monitoring functions are unnecessary. Unfortunately, compressed air is one of the most expensive sources of energy on the plant floor.

The U.S. Department of Energy estimates the cost at 18 cents to 30 cents per 1,000 cubic feet of compressed air. With the rising costs of electricity in mind, a 100-hp compressor system can cost about US$75,000 annually for energy, depending on its operating hours.

In fact, 79% of the costs for compressed air are from the cost of electrical energy, while 15% and 6% are the costs for capital investment and maintenance, respectively. Surprisingly, this isn't a well-known or accepted fact among manufacturers.

The potential remains unrealized to optimize compressed air systems to save electrical energy for compressed air. Manufacturers can save up to 33% on electrical energy costs by improving the dimensioning of compressors and air distribution nets, optimizing drives, reducing leaks, and avoiding inappropriate use of compressed air. **Figure 1** shows the results of a European Union (EU) study in which the components of saving potentials are documented.

With these statistics, it's clear why Mike Cybulski, president of Festo Corp., Hauppauge, N.Y., confirms that customers are more frequently asking how much compressed air and pressure is needed at the point of consumption, and how much compressed air and pressure their compressor rooms should supply during shifts, weekends and peak flow events.

"Many customers using energy management solutions like Rockwell Software® RSEnergyMetrix® for the electrical side are already achieving impressive energy and cost reductions," says Sean Schmelzer, product manager of RSEnergyMetrix for Rockwell Automation. "However, now they want to expand their system and incorporate the pneumatic side into their existing energy management solution to achieve cost savings for the pneumatic side as well."

"The new energy monitoring package for pneumatic systems — GFDM — generates cost savings," says Cybulski. "But what multiplies the cost savings is if pressure values and compressed air figures are seamlessly measured and tracked from the supply side to the point of consumption." (See **Figure 2.**)

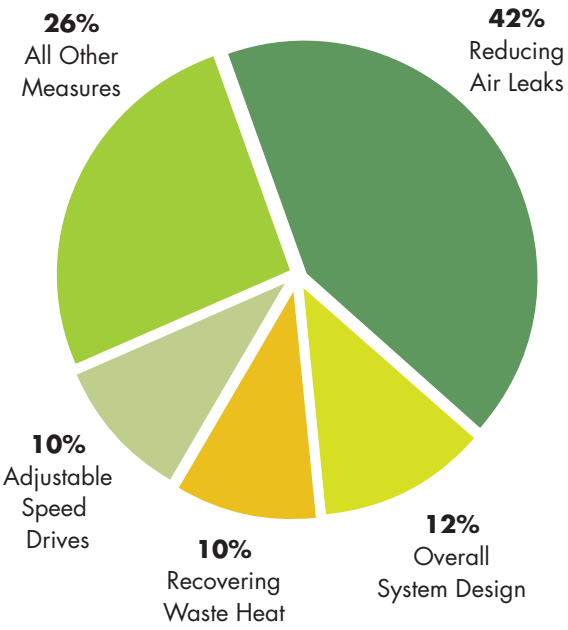

Figure 1. These are potential areas for major energy savings. *Source: EU study, 2001.*

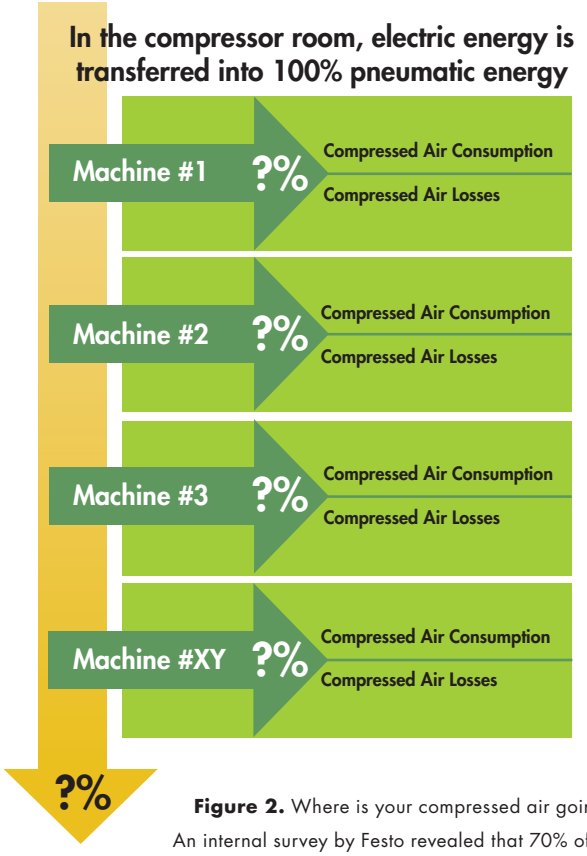

Figure 2. Where is your compressed air going? An internal survey by Festo revealed that 70% of compressed air users are not aware of how much compressed air and pressure is generated, and where and how much compressed air is actually used in their plants.

Energy Management for Pneumatic Systems

To measure and monitor compressed air generation, distribution and consumption, different hardware and software products have to work together.

The GFDM energy monitoring package from Festo Corp., a Rockwell Automation Encompass™ Product Partner, is a product for measuring and monitoring compressed air on the demand side (see **Figure 3**). Sensors, inserted into the main air line of existing or new pneumatic applications, are combined with a diagnostic module. The diagnostic module can be installed in the pneumatic machine's cabinet.

All available machining modes are monitored — standby, off, running, part A, part B, etc. Pressure and consumption figures for each mode are determined and sent to a front-end display (FED), SCADA system, or plant-wide energy management system.

>> Checklist for Maximizing Savings

Plant managers can use this checklist to help turn the acquired data from the energy management system into cost savings. It helps to chart a path toward applying energy management solutions to pneumatics. The steps can be more detailed and depend on the situation on-site.

Preparation Phase

- Assign a plant-wide compressed air champion.
- Make a drawing of your air system and divide your plant into areas, pneumatic machines or applications of interest.
- Select power, pressure and flow sensors for the compressor room.
- Select GFDM energy management system configurations for compressed air requirements of the demand side.
- Include the IT department to set up a server running RSEnergyMetrix.

Installation Phase

- Install sensors (kilowatt, pressure and flow sensors) in the compressor room and, if required, in the air distribution system. Sensors before and after filters determine the degree of information detail. At least a pressure and a flow sensor should be implemented at the main air distribution pipe.
- Implement GFDM in front of the selected machines or applications. Air consumption during nonproduction indicates leakage. Make those machines or applications leak free. It only makes sense to create reference values and to start monitoring if pneumatic machines consume a minimum of compressed air.
- Teach GFDM. From that moment on, GFDM monitors air consumption and machine pressure and informs you if tolerance thresholds are exceeded, such as by new leaks.
- Connect all sensors and GFDMs to the intranet.
- Commission Rockwell Software RSEnergyMetrix.

Data Collection Phase I

- Collect data for a period of time covering normal production times, peak production events, weekends, events of problems in the air system, etc. — if necessary, over the course of several weeks.

Data Evaluation of Phase I

- Share monthly air consumption and compressed air cost statements of defined areas of the plant or at the point of consumption with colleagues and upper-level management.
- Categorize where and when compressed air use is high.
- Check where air is consumed during nonproduction times to determine the location of leakages.
- Determine when and where peak flow events occur.
- Find unnecessary pressure reductions and pressure losses.
- Plan the actions that need to be taken in order of priority to reduce energy consumption. For cases in which the data evaluation is too complex, include a qualified air-system supplier before starting the next phase.

Improvement Phase I: The Demand Side and Air Distribution System

- Start with the prioritized potentials for improvement on the demand side and air distribution (identified leakages, pressure losses, substitution of components with high air consumption, etc.). At the end of this phase, the demand side and the air distribution system should be optimized.

Data Collection Phase II

- Collect data for a time covering normal production, peak production events, weekends, events of problems in the air system, etc. — if necessary, over several weeks.

Data Evaluation of Phase II

- Share monthly air consumption and compressed air cost statements of defined plant areas or at the point of consumption with colleagues and upper-level management.
- Reevaluate the data after Improvement Phase I, and compare the actions taken with the success achieved.
- Categorize where and when compressed air use is high.
- Determine when and where peak flow events occur.
- Check how much air demand and pressure is required at the point of consumption, and compare the demand side with the supply side.
- Check the plausibility of compressor activities according to compressed air requirements.
- Plan the actions that need to be taken in order of priority to help reduce energy consumption. For cases in which the data evaluation is too complex, include a qualified specialist before starting the next phase.

Improvement Phase II: Supply Side

- Select a compressor(s) configuration that can fulfill the needs of optimized requirements of the demand side.
- Check storage and compressor sizing and control to provide proper pressure and flow supply.
- Lower supply side generated pressure where possible.

Ongoing Data Collection and Monitoring

- Continue to collect data with activated alarm thresholds that notify you if compressed air consumption, electric energy consumption or pressure fluctuations exceed certain limits.

The energy monitoring package quantifies air consumption, pressure and flow values of different machine operation modes to evaluate the pneumatic system's health status; find a machine's optimal point of operation; identify inefficiencies; schedule preventive maintenance; and to perform central or decentralized air consumption monitoring.

Once commissioned, the energy monitoring package continuously monitors the machine's air consumption to provide constant updates about system performance. An increase in system air consumption or pressure fluctuations are quickly indicated. This helps to reduce downtime and keeps equipment operating. It also helps provide a cost-effective production schedule and deliver a quality product.

The user can configure the energy monitoring package for up to 16 different processes. These can be configurations for batch operations with different air consumption profiles, and can be totally independent from each other. If batches have many variations, a new teach-in is unnecessary.

Previously generated data is available in the memory and is automatically uploaded. This allows different operating batches at different clock hours in a 24/7 operation. Documenting actual value comparisons permits a full analysis of the machine, allowing potential problems to be immediately discovered.

Rockwell Software RSEnergyMetrix energy management software captures, analyzes, stores and shares energy data across the entire enterprise. Using a Web browser, users can get energy information from a company's LAN or WAN to help optimize energy consumption.

Tracking performance over time is vital to detect performance degradation or changes in the amount of air use.

RSEnergyMetrix and GFDM can easily be combined as part of a plant-wide and long-range plan to account for energy consumption and to match compressed air demand in the field with the compressed air production in the compressor room. While GFDM measures and monitors the pneumatic side in the field, RSEnergyMetrix provides plant-wide load profiling, energy usage logging, cost allocation and billing analysis tools.

It also views and trends historical data dynamically or within custom reports and charts, creates energy budgets and forecasts, or compares alternative rate schedules to analyze potential cost savings. **Figures 4** and **5** show how historical data of compressed air demand and supply can be evaluated to help make decisions about compressed air capacity.

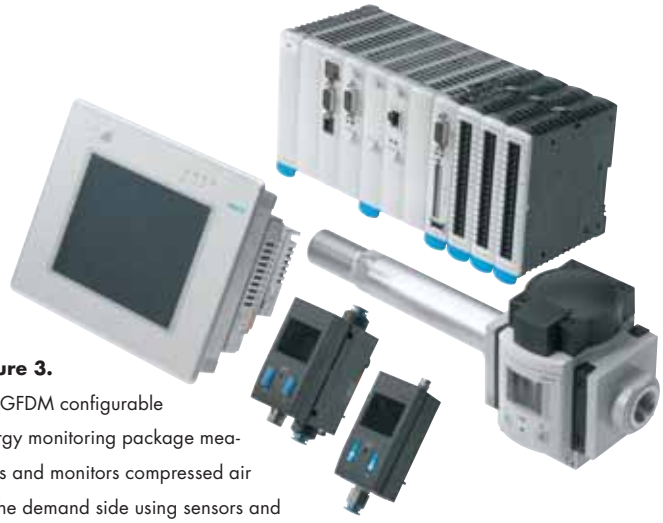

Figure 3.
The GFDM configurable energy monitoring package measures and monitors compressed air on the demand side using sensors and a diagnostic module.

Energy Management for Compressed Air Systems

In hundreds of air audits conducted by Festo Corp. on the demand side, between 35% and 65% savings in compressed air consumption could be achieved. Those are already impressive numbers.

However, if compressed air and pressure values could be continuously audited and tracked from the supply side (compressor room) to the demand side (point of consumption), this not only could help reduce the amount of compressed air spent on the demand side, but could also help optimize the whole plant air system.

The result is long-term generation of sufficient data to help detect and eliminate inefficiencies in the entire air system. With the right technical measures, compressed air demand and supply can be synchronized.

I am convinced that the combination of RSEnergyMetrix with GFDM will help improve compressed air system's efficiency. If GFDM and a powerful energy management system like RSEnergyMetrix are combined, the plant-wide true costs of compressed air demand and supply, and locations of inefficiencies and waste are revealed, delivering a quicker payback on the energy management system upgrade.

In the compressor room, Allen-Bradley® Powermonitors™ from Rockwell Automation measure the compressors' power consumption while pressure and flow sensors deliver the pressure, flow and air volume information of the compressed air leaving the compressor room.

In the air distribution system, compressed air travels from the compressor room to the point of use (demand side). If flow and pressure sensors are integrated, cross points of the air distribution system plant areas can be monitored for purposes such as cost accounting. Pressure sensors at the outlet of the compressor room and at the points of consumption deliver information about pressure drops of the air distribution system.

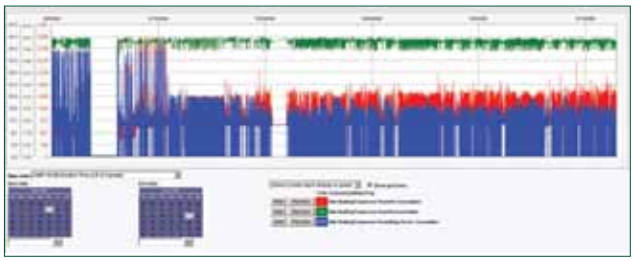

Figure 4. RSEnergyMetrix delivers load profiles in certain time frames with a mouse click — power consumptions of compressors together with pressure and air supply of the compressor room. Plant managers can compare this information with pressure and consumption figures of individual machines on the demand side.

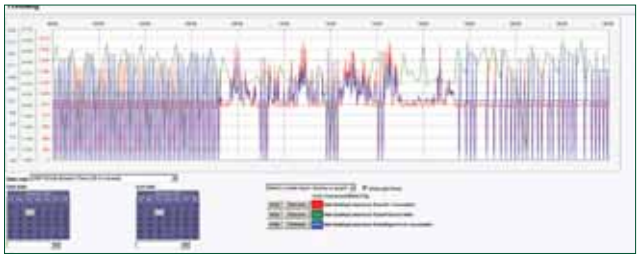

Figure 5. This graph shows pressure monitoring at an aluminum saw (red) compared to the pressure at the outlet of the compressor room (green). After removal of pressure losses caused by clogged filters and by the air distribution system, both pressure signals perfectly match. In a following step, the pressure delivered by the compressor can be reduced.

On the demand side, the energy monitoring package measures and monitors the pneumatic energy consumption spent by machines or applications. Data transfer between the energy monitoring package and RSEnergyMetrix is based on OPC communication.

Which plant managers should consider complementing their energy management system for compressed air? Specific compressed air users who can benefit include those who:

- Don't want to add more compressor capacity.
- Don't want to spend additional money for leaking compressed air.
- Want to replace inefficient leak detection programs.
- Want to allocate compressed air costs to certain production areas.
- Want to synchronize the demand side with the supply side.
- Have energy-intensive production processes suffering over proportionately rising energy costs.
- Have to add more compressor capacity and wonder what size of air compressor, what type of control system, and where to locate the additional compressor.
- Want to understand the locations and reasons for undesired pressure losses or fluctuations.
- Want to avoid unscheduled downtime related to their pneumatic machines.

Benefits of Improving Performance

Manufacturers can spend hundreds of thousands of dollars each year on energy that powers compressed air systems. However, complementing an energy accounting system such as RSEnergyMetrix with GFDM doesn't improve energy efficiency by itself. It does lead to better-informed decisions about technical measures that can help achieve the best overall system performance to help to cut costs.

Those measures can have a positive effect on nearly every aspect of compressed air system and include:

- Modified production schedules to avoid high demand and peak flow events.
- Altered compressor types, compressor room technology and compressor locations
- Modified control systems.
- Changed overall system design, including multi-pressure systems or subsystems
- Identified, localized and reduced air leaks.
- Identified, localized and reduced pressure losses in the compressor room, the air distribution system and on the demand side.
- Optimized pneumatic components — air preparation units, valves, drives, sensors, pipes, connectors, storage, blowing and vacuum applications, etc. — in the air distribution system and on the demand side.

The first step to improve energy efficiency is to measure and track the compressed air system performance. This helps users make decisions about changes in maintenance practice, equipment replacement or extensions in systems based on reasonable documented facts and, consequently, help achieve the highest possible cost savings. Also, tracking performance over time is vital to detect performance degradation or changes in characteristics or air use, especially as compressed air systems grow, change and develop. □

Festo Corp., based in Hauppauge, N.Y. participates as an Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™. The company is a global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation.

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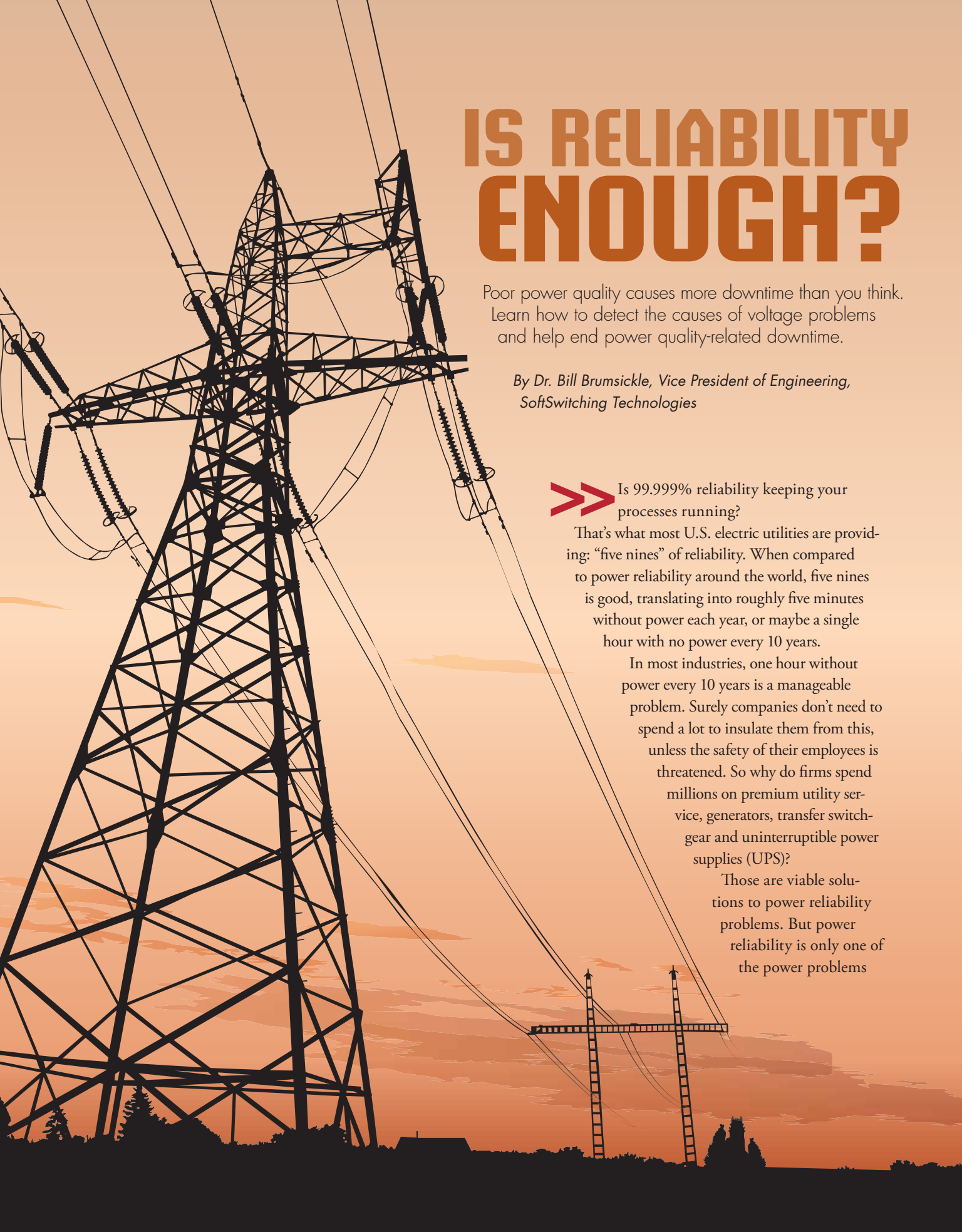


IS RELIABILITY ENOUGH?

Poor power quality causes more downtime than you think. Learn how to detect the causes of voltage problems and help end power quality-related downtime.

By Dr. Bill Brumsickle, Vice President of Engineering, SoftSwitching Technologies

Is 99.999% reliability keeping your processes running?

That's what most U.S. electric utilities are providing: "five nines" of reliability. When compared to power reliability around the world, five nines is good, translating into roughly five minutes without power each year, or maybe a single hour with no power every 10 years.

In most industries, one hour without power every 10 years is a manageable problem. Surely companies don't need to spend a lot to insulate them from this, unless the safety of their employees is threatened. So why do firms spend millions on premium utility service, generators, transfer switchgear and uninterruptible power supplies (UPS)?

Those are viable solutions to power reliability problems. But power reliability is only one of the power problems

facing manufacturers. When calculating those five nines, only power outages longer than two minutes are counted as a failure of service. Short-term voltage deviations are much more common. The result is that poor power *quality* (PQ) causes more downtime than poor power *reliability*.

We'll examine PQ and see how to use PQ monitoring to identify the cause of voltage sags to help prevent PQ-related downtime.

Power Reliability Doesn't Tell the Whole Story

Brief voltage disturbances cause most power-related downtime. More than 92% of all power glitches are voltage sags lasting less than two seconds.

Voltage sags occur when weather, animals, equipment failure or human error cause a short circuit on the utility grid. Sags are most commonly related to such "grid events" that are both unpredictable and beyond your control. U.S. manufacturers, even with premium power, experience six to 10 voltage sags every year. Many are hit by weekly voltage sags during the spring and summer storm seasons.

Although some voltage sags can cause the lights to blink, they aren't always so detectable. Some sags are so short that the lighting flicker is imperceptible. In a three-phase industrial environment, a voltage sag on phase "B" won't be recognized if the lights are wired on phase "A."

Highly automated factories have hundreds or thousands of "ice cube" relays scattered throughout production lines, often part of emergency off (EMO or EPO) circuits. It only takes one tripped relay to bring down the line. A one-cycle (16 ms) sag with 75% voltage remaining will trip most ice cube relays, but will barely cause the lights to flicker.

Unfortunately, the resulting downtime isn't as fleeting as the voltage sag. In many cases, a sub-second voltage sag can cause hours of lost production.

What Happens to Automated Production Lines After a Voltage Sag?

In the semiconductor industry, voltage sags often **shut down** the following:

- Etch tool
- Photolithography tool
- Metrology
- Surface preparation and cleaning tools
- CVD
- Ion implant tool
- Diffusion furnace
- Gas cabinet
- CMP
- Water handling system
- Scrubber
- Inspection
- Packaging

In the automotive industry, voltage sags often **shut down** the following:

- Weld shop
- Paint shop
- Robotics
- CNC tools
- Compressors
- Transfer lines
- Machining centers
- Heat treat ovens
- Flexible assembly
- Engine test cells
- Transfer systems
- Draw panels

In the food and beverage industry, voltage sags often **shut down** the following:

- Dry extruders
- Aseptic packaging lines
- Tunnel ovens
- Pudding lines
- Bottling lines

Our customers who track the process impact of voltage sags have concluded that sags account for as much as 70% of their total annual unscheduled downtime.

The correlation between voltage sag events and unscheduled downtime is high, but the time down can vary widely. A 0.1-second voltage sag can shut down an aseptic packaging line for nine hours for cleaning; can break a CNC machine tool bit that can take hours to replace; and can idle thousands of factory workers for hours in an automotive assembly plant.

Shielding your production lines from voltage sags can cost-effectively increase your annual productivity by as much as 2%.

How Do You Get Started?

First, look in the right places. While being the primary cause of unscheduled downtime, isolating PQ problems can be tricky. Simply monitoring the power isn't enough. It helps to choose a PQ monitoring system that can identify the source of voltage

disturbances by distinguishing between a local PQ event and a grid event.

The power monitor must be properly set up in your plant, have fast response time, and have the ability to capture the event data for future reference. Each time any operation in your plant goes down, you'll want to check the power monitor. If the monitor reports a sag, you know what caused the downtime. However, you still don't know what caused the sag — it could have been something in your facility, but more likely it was a grid event that occurred outside your fence.

Companies spend hours looking for the causes of downtime and often never find it. Plant engineers are in a real bind if they must tell the plant manager that they don't know what caused the line to drop. So based on speculation, or in the interest of job security, they blame the equipment, such as the programmable logic controller (PLC), variable-frequency drive (VFD), a sensor or a failed soft starter.

In many cases, they actually extend the duration of the process downtime while replacing innocent equipment. Isn't it ironic that as much as 70% of all automation equipment returned to the equipment supplier for repair while under warranty is diagnosed as "no problem found?"

About 98% of all power disturbances are voltage sags lasting less than two seconds.

We recently were informed of one automotive assembly plant that returned 15 PLCs to the manufacturer after all 15 shut down at the same time. How long did it take the plant to replace the 15 PLCs? How much did it cost in downtime? These are all costly actions that affect the plant's productivity.

Use Equipment Designed for Industrial Environments

Because voltage sags are so short in duration, power reliability technologies such as generators, automatic transfer switches and standby UPS aren't fast enough to respond to sags and prevent downtime. Solving PQ problems requires equipment purposely built for the task.

Cost-effectively deploying power quality equipment requires careful planning. A battery-free, energy-efficient voltage sag corrector like this one is built specifically to mitigate industrial power quality problems.

The Dynamic Sag Corrector (DySC) from Rockwell Automation Encompass™ Product Partner SoftSwitching Technologies is a battery-free solution optimized for industrial PQ problems. It's fast, scaleable, energy efficient and nearly maintenance free.

Cost-effectively deploying PQ equipment in the factory requires careful planning; some operations don't require PQ protection. In a typical automated facility, less than 50% of the total power is used for equipment that is both critical and sensitive to voltage sags. The nature of the business also is a consideration. Manufacturers that need PQ protection include:

- Those who are production constrained.
- Plants suffering from expensive scrap.
- Factories constrained by just-in-time (JIT) contracts and needing to minimize finished goods inventories and punitive back charges.

Voltage sags impact capital equipment utilization, scrap expense, rework expense, missed deliveries, idled direct expense and factory overhead. So, the true cost of downtime is much higher than you might think.

As factories and plants commit to tighter process controls, high-speed digital technologies will be required to meet the rigorous demands. Many manufacturing facilities already have more computers in the factory than in the front office. IT departments wouldn't think of operating their servers without power protection — shouldn't factory automation get the same level of protection? □

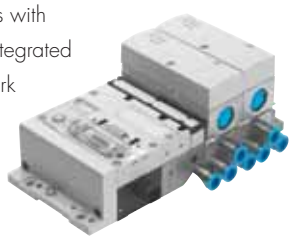
SoftSwitching Technologies, Middleton, Wis., is a participating Encompass Product Partner in the Rockwell Automation PartnerNetwork™. The company offers the Grid Alert power grid sensing, notification and corroboration utility, and the Dynamic Sag Corrector (DySC) voltage sag mitigation and power quality solution.

SoftSwitching Technologies
www.rockwellautomation.com/go/p-softswitching
Rockwell Automation Encompass
Product Partner Program
www.rockwellautomation.com/go/tjencompass

Rockwell Automation
Encompass™
Product Partner

ENCOMPASS SHOWCASE

Proportional Pressure Regulator VPPM with CPX/MPA



VPPM allows for proportional pneumatics with directional or stand-alone valves to be integrated with Rockwell Automation leading network technology (EtherNet/IP and DeviceNet). The complete system supports a combination of regulators, valves and I/O, with a maximum of 16 regulators. A unique dual-pressure technology for precise regulation enables VPPM to provide optimized performance via one of three response functions (fast, universal and precise). For more information, visit www.festo.com/us/vppm/raj.

FESTO CORP.

SlotServer – ControlLogix Interface to Fire Alarm Control Panels

Process systems often need to interface the plant's building automation systems and fire alarm control panels (FACP) via the ControlLogix® platform. Fire alarm panels tend to utilize proprietary protocols. FieldServer has the complete library of fire alarm panel protocols enabling ControlLogix interface to fire alarm panel systems. For more information, call (408) 262-2299 or (888) 509-1970, e-mail sales@fieldserver.com, or visit www.fieldserver.com/rockwell.

FIELDSERVER TECHNOLOGIES

Burkert Mass Flow Controllers for Gases

Burkert's comprehensive line of Mass Flow Controllers (MFC) for gases includes the Type 8712, employing CMOSens® technology for responses four times faster than conventional MFCs, with an optional low-flow rate as low as 0.04 cm3N/min. Other Burkert MFCs include the Type 8626, with a low flow rate ranging from 25-1500 l N/min. This permits a constant gas flow or flow following a pre-defined set-point profile; compatible with ammonia gas. For more information, call (949) 223-3100 or visit www.burkert-usa.com

BURKERT FLUID CONTROL SYSTEMS

Gear Motor Systems Solutions

Wittenstein's TPM+ is the successor to the gear motor by Rockwell Automation. With more ratios, improved dynamic performance and factory programmed with Kinetix® motion control data files, this product is a mechanical drop-in replacement for the Rockwell Automation MPG. Compact and powerful, this product packs a real punch. Call (888) 534-1222 or visit www.wittenstein-us.com.

WITTENSTEIN INC.

Bulk Solids Metering Controls

The Schenck AccuRate DISOCONT® dynamic weight-based bulk solids metering control is designed specifically for loss-in-weight, gain-in-weight, and loss-of-weight feeding applications. It is utilized when dry bulk materials need to be measured, fed or batched with the use of a Schenck AccuRate feeder, weighfeeder or solids flow meter. Compatibility with DeviceNet and EtherNet/IP fieldbus communications are achievable with the control. For more information, visit www.accuratefeeders.com or call (800) 606-9252.

SCHENCK ACCURATE

Weigh Scale Modules

Hardy Instruments' single-scale HI 1769-WS and dual-scale HI 1769-2WS weigh modules read weight and diagnostic data supplied by load cells from one or two independent scales. They then communicate this data over an integrated backplane to Allen-Bradley® MicroLogix™ 1500 and CompactLogix™ controllers. Both modules reduce installation time and system costs, as the system needs no external stand-alone scale instrument with a wired communications link to the PLC. For more information, visit www.hardyinstruments.com/1769, or call (800) 821-5831 or (858) 278-2900.

HARDY INSTRUMENTS

Rockwell Automation
Encompass™ Product Partner

ENCOMPASS SHOWCASE

Single-Channel Weigh Scale Module

This single-channel weigh scale module features strain gage signal conditioning, built-in tare, and programmable gain and calibration functions. It is available in 16 bit 1 millisecond update (10,000 count full-scale) , and 20 bit 200 millisecond update (100,000 count full-scale) versions. Applications for the HM-1734 module include batching, filling, process/bulk weighing and level control. Helm also manufactures strain gage modules for the 1746, 1756 and 1769 I/O platforms. For more information, call (419) 893-4356 or visit www.helminstrument.com.

HELM INSTRUMENT CO, INC.

Excel Reporting for Production and Management

Finally, a reporting solution that gives the information you need, in the form you want, with absolutely no programming. XLReporter turns raw process data into a polished report in worksheets, Web pages or e-mail. If you are looking to combine the best of Microsoft Excel with a product that has industrial robustness, fast data access, integrated tag browsing and first-class support, then this product is for you! The product is compatible with RSLinx®, RSView®, OPC Servers, OPC-HDA Servers, ODBC-compliant databases and much more. For more information, call us at (508) 520-9957 or download your free evaluation copy from our Web site at www.TheReportCompany.com.

SYTECH

Electrical CAD/CAE Software

Design and document your controls hardware systems efficiently and accurately with EPLAN Electric P8. Automatic functions such as online cross-referencing, device tagging, wire numbering, and project reports that match schematics 1:1 significantly reduce design time and eliminate errors associated with manual tasks. Advanced capabilities such as EPLAN macros with variants, project options and automatic JIC/IEC standards conversion provide further productivity gains. For more information and to try EPLAN free for 30 days, visit www.eplanusa.com.

EPLAN SOFTWARE & SERVICES

Harmonic Mitigation Filters

Your goal is to have an efficient application that you don't have to worry about every day. TCI offers the products that will help you achieve your goal. The HG7 HarmonicGuard® Series Filter limits current distortion to less than 7 percent TDD and improves true power factor. This helps ensure an efficient system and a happy customer. To learn more, visit www.transcoil.com.

TCI LLC

Helical Planetary Gearbox

The in-line and right-angle Apex Compact AD/ADR series product provides the ultimate solution where positioning under load is necessary and space is tight. The Ultra Stiff patented design is available in multiple ratios (4, 5, 7 and 10:1) and also includes many double-stage reductions (including the odd ratios of 21, 31, 61 and 91:1). It's available in seven sizes, ranging from the exclusive 47 mm through the larger 255 mm that will plug-and-play for comparable designs on the market today — save up to 30%. The precision helical design has an efficiency of 97%+ and is available in three precision classes (as low as 1 arc-minute), with a five-year warranty and 100% on-time delivery. Call (631) 244-9040 or visit www.apexdyna.com.

APEX DYNAMICS USA

Video Historian

The Longwatch Video Historian enables users to acquire and store video clips linked with process and manufacturing variables such as time of day, camera number, batch step, machine ID and other control-system tags. Much like a process historian that stores information about processes, the Video Historian archives video that documents procedures in batch applications, provides visual proof of regulatory compliance, monitors machinery, observes operator actions, and helps improve quality, reduce downtime and avoid costly losses. For more information, call (877) LONGWATCH or visit www.longwatch.com.

LONGWATCH

FIND NETWORK TRAFFIC THAT DOESN'T BELONG

Spot and remove unwanted protocols to improve network performance.

Eric Anderson, Product Marketing Manager, Fluke Networks

As networks and the services they provide evolve and servers or user machines are replaced and upgraded, the likelihood of passing unwanted, often obsolete protocols within the network increases. Potentially more challenging is the existence of protocols that may degrade network performance. Each situation is unique, but knowing how to find these protocols and having a tool that shows which devices are using a particular protocol, as well as where these devices are connected to the network, is critical.

The Fluke Networks' EtherScope™ Series II Network Assistant can identify unwanted protocols and discover networked devices. Fluke Networks is an Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™. When connected to a span port, the EtherScope analyzer monitors network traffic and automatically provides protocol statistics for an extensive list of protocol types.

The analyzer monitors network traffic and automatically provides protocol statistics.

To identify these unwanted protocols using the EtherScope analyzer, select Protocol Statistics from the home page (see **Figure 1**).

The preview pane shows the top protocols and their percentage of total packets on the network. Tap the Details button to see a list of all the discovered network protocols on the local network segment (see **Figure 2**).

Select a device in the summary view to see Device Details for that device (see **Figure 3**).

Using Protocol Statistics will help ensure that the only traffic on your network is the type you want and know about. □

Rockwell Automation Encompass Partner Fluke Networks, Everett, Wash., supplies test tools for cabling infrastructure and network diagnostics.

Fluke Networks
www.rockwellautomation.com/go/p-fluke

Rockwell Automation Encompass Product Partner Program
www.rockwellautomation.com/go/tjencompass

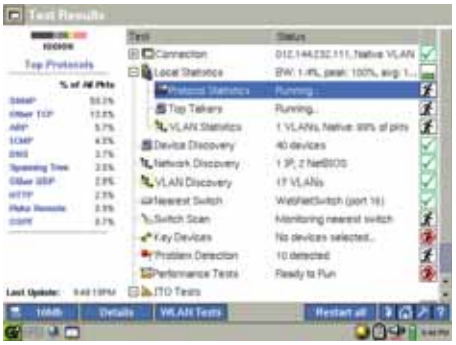


Figure 1. Selecting Protocol Statistics from the home page identifies unwanted protocols.

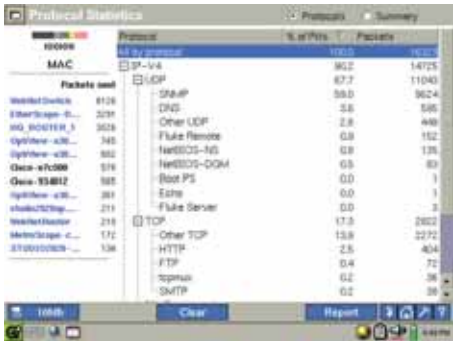


Figure 2. Using the Details button reveals a list of all the discovered network protocols.

Figure 3. Select a device and get detailed information about it.

WHAT IS TARE VALUE?

Learn how tare value is used in weighing systems.

By the Hardy Instruments Technical Support Team

In your weighing system, the tare value is the numerical difference between gross weight and net weight. This article illustrates how tare values are used. The examples are described using modules from Hardy Instruments, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™.

When the tare function is activated on the HI 1746WS, HI 1756WS, HI 1769WS, HI 1771WS, HI 200DNWM, HI 2110WI, HI 2151/30WC, HI 3010, HI 3030 and HI 4050, the current gross weight is placed in the Tare Value register. You also can input this data from the front keypad or across communications. The process of doing a tare or updating the Tare Register varies slightly from model to model. Consult the model type user manual for procedures.

The following examples explain how tare value is used.

Example No. 1: Filling

- The operator places an empty container weighing 30 pounds on a scale.
- He pushes the tare button.
- A value of 30 is automatically entered into the Tare Register.
- The gross weight is 30 pounds, the tare value is 30 pounds and the net weight is 0 pounds (gross weight - tare value = net weight).
- As the container is filled, the difference between gross weight and net weight will remain a constant 30 pounds.

Example No. 2: Discharging

- A vessel is permanently installed on load cells and calibrated.
- The vessel is filled with 1,000 pounds of material.
- An operator pushes the tare button.
- A value of 1,000 is automatically entered in the tare register.
- The gross weight is 1,000 pounds, the tare value is 1,000 pounds and the net weight is 0 pounds.
- When 100 pounds is discharged from the vessel, the net weight will read "-100 pounds" and the gross weight will read "900 pounds."
- A tare is performed before each discharge.

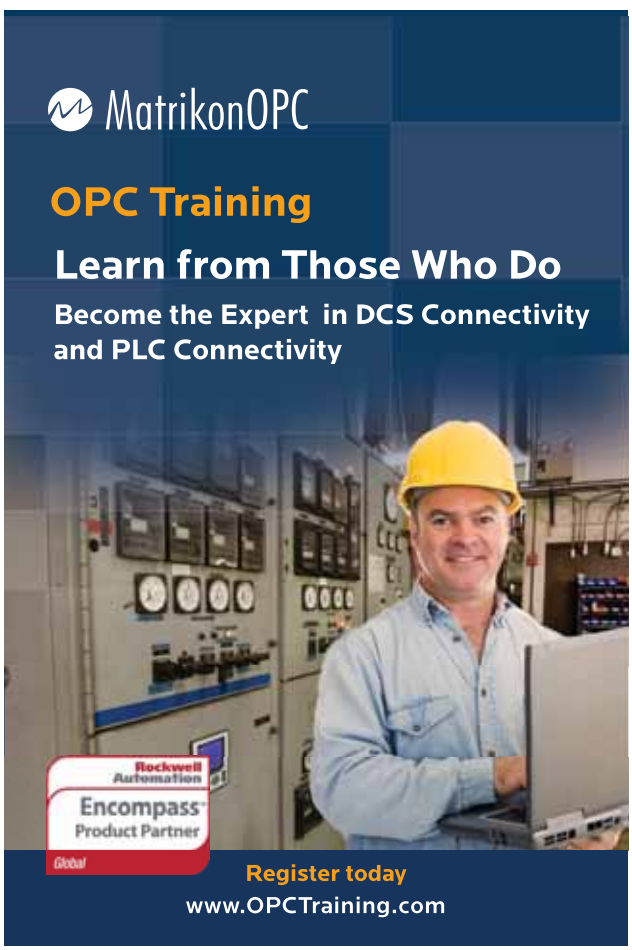
Example No. 3: Intermediate Bulk Containers

- Full containers arrive with the empty container weight listed.
- An operator enters the empty container weight into the tare register via the front panel, or downloads it from a PC or programmable logic controller (PLC).
- The net weight is now the weight of the material in the container.
- The gross weight is the total of the material and container.
- The tare value is the weight of the container.

You can use your weighing systems more effectively by understanding how tare values are used. □

Rockwell Automation Encompass Product Partner Hardy Instruments, San Diego, designs and manufactures process weighing instrumentation.

Hardy Instruments
www.rockwellautomation.com/go/p-hardy



RECOVER, REUSE

By using on-site solvent recovery, life sciences companies can cut energy, waste and costs while helping the environment.

By Trevor Mahoney, Process Team Leader, ProsCon Ltd., A Rockwell Automation Company

Paradigm shifts for financial decision-making are occurring in all industries. The life sciences industry faces special economic challenges when drug patents expire. For life sciences companies to sustain financial performance into the next decade, they must also sustain their environmental performance. Solvent recovery solutions can help meet this challenge.

Solvent Usage

In the life sciences industry, solvents are essential to manufacturing. They constitute a large portion of the raw materials consumed and the waste discharged. Solvent use consistently accounts for 80% to 90% of mass utilization in a typical pharmaceutical/fine chemicals (nonpolymer) batch chemical operation[1].

Pharmaceuticals manufacturing can be divided into the Active Pharmaceutical Ingredient (API) and the Fill/Finish processes. The API process formulates the active ingredient, and the Fill/Finish process puts the API into pills or capsules.

Solvents have several uses, including preparation, extraction and purification in the API process. These range from familiar substances such as acetone and ethanol to more unique solvents such as tetrahydrofuran (THF) and methyl tert-butyl ether (MTBE). API manufacturing outputs consist of bulk API, often in powder form ready for Fill/Finish, and solvent-waste streams. As the bulk API moves on for further processing, the solvent-waste streams must either be treated on-site or sent off-site for treatment.

Old-Fashioned Handling

The finished pharmaceutical product is commonly required to contain only trace amounts of solvent, if any. Therefore, the masses of solvent put into the process must be

removed; consumption should equal discharge.

A widespread practice has been to incinerate this solvent-waste stream rather then recover or reuse it, because the production process uses only "fresh" or "virgin" solvent. An off-site contracted waste removal company usually incinerates the solvent, and this can be a major manufacturing expenditure with unwanted environmental impact.

Reuse of the recovered solvent was previously precluded by drug filing regulations. If a drug is approved for use when manufactured with virgin solvent, a new regulatory filing would have been required to use the recovered product instead.

Solvent Handling in Sustainable Production

New business drivers are changing this mindset. Companies now are motivated to implement solvent recovery rather than incinerating their waste. These drivers include drug patent expirations and resultant increased competition from generic manufacturers; the rising cost of raw materials; environmental regulations; and consumer and community imperatives

As a result, the trend to recover and reuse solvent is gaining widespread acceptance.

Solvent Recovery

Solvent recovery is the process of taking a waste stream and separating the components. The goal is to produce a solvent-product stream to the specified purity required for reuse in production, such as 96% ethanol, 4% water.

Various types of solvent recovery technologies encompass all variations of solvent-waste streams generated during manufacturing. Systems can be designed to handle one specific solvent-waste stream or multiple different solvent waste streams.

Benefits of Solvent Recovery

Solvent recovery helps manufacturers to be more competitive because they can:

- Reduce the amount of solvent purchased.
- Mitigate the risk of solvent shortages (currently the problem for solvents that are the by-product of other manufacturing industries that are slowing, such as acetonitrile).
- Minimize the volume of discharged waste, and therefore decrease disposal costs.
- Meet environmental regulations while maintaining the required manufacturing quality.

Recovering solvent also benefits the community and environment. Reduced raw material consumption reduces the stress on the earth's resources. In addition, by using solvent recovery instead of incineration, carbon emissions can be significantly reduced.

Solvent recovery can be applied to

>> What the Worldwide Shortage of ACN Means to You

By Charles R. McBride, Process Technology & Modular Construction, ProsCon Ltd., A Rockwell Automation Company

The worldwide shortage of acetonitrile (ACN) products is primarily related to the global economic downturn. ACN is a by-product from the automotive industry that is widely used in the pharmaceutical industry for laboratory use and in Active Pharmaceutical Ingredient (API) processes. Raw ACN is obtained as a by-product in the production of acrylonitrile, a plastic used in automobile components and other products such as carpets and luggage. As a consequence of the collapse in the automotive industry and the associated overall reduction of demand for acrylonitrile, the supply of ACN has been significantly reduced.

This supply constraint will continue in the short to medium term, with an extreme shortage being anticipated for the first half of 2009. This is causing sharp price increases — in some cases six to eight times that of the 2008 ACN price. This increase is expected to remain for quite some time.

Benefits that you can realize by recovering spent solvent can include:

- Good payback period, typically fewer than 15 months.
- Reduced solvent purchase and resulting protection against future solvent supply and cost issues.
- Reduced waste and disposal costs, including the elimination of spent solvent transport from site and associated risks.
- Reduced environmental impact of incineration.
- Custom design for your specific process needs.
- Highest purity solvent for reuse.

ProsCon Ltd., a Rockwell Automation company, has extensive experience in ACN separation and has a long track record in supplying solvent recovery systems to the life sciences market globally. If you can provide us with the purity of ACN required and details on the spent solvent waste stream, we can supply a system to meet those needs.

For more information, contact Charles R. McBride at crmcbride@ra.rockwell.com, phone (714) 938-9019.

an array of manufacturing solvent-waste streams, and it's especially applicable for the life sciences industry. Each application is unique. The capital investment can range from several hundred thousand dollars to several million dollars, but payback periods often are realized in two years or less.

With strategies such as modular build, project life cycles can be less than 18 months and require minimal footprints and minimal site disruption. Operational costs are quite low compared to traditional distillation technologies, and heat integration and complete automation systems further minimize energy usage.

The Shift

On-site solvent recovery is becoming an imperative to remain competitive, to conform to increasingly stringent environmental regulations and to remain sustainable.

The benefits are clear: solvent recovery reduces production costs (raw materials, hauling and treatment), reduces waste volumes, mitigates supply risk, meets regulatory requirements and satisfies green initiatives all while maintaining the quality required for manufacturing.

Solvent recovery benefits manufacturers as well as the world with reduced solvent consumption and reduced emissions. Manufacturers who don't have such capability owe it to themselves to explore this opportunity. □

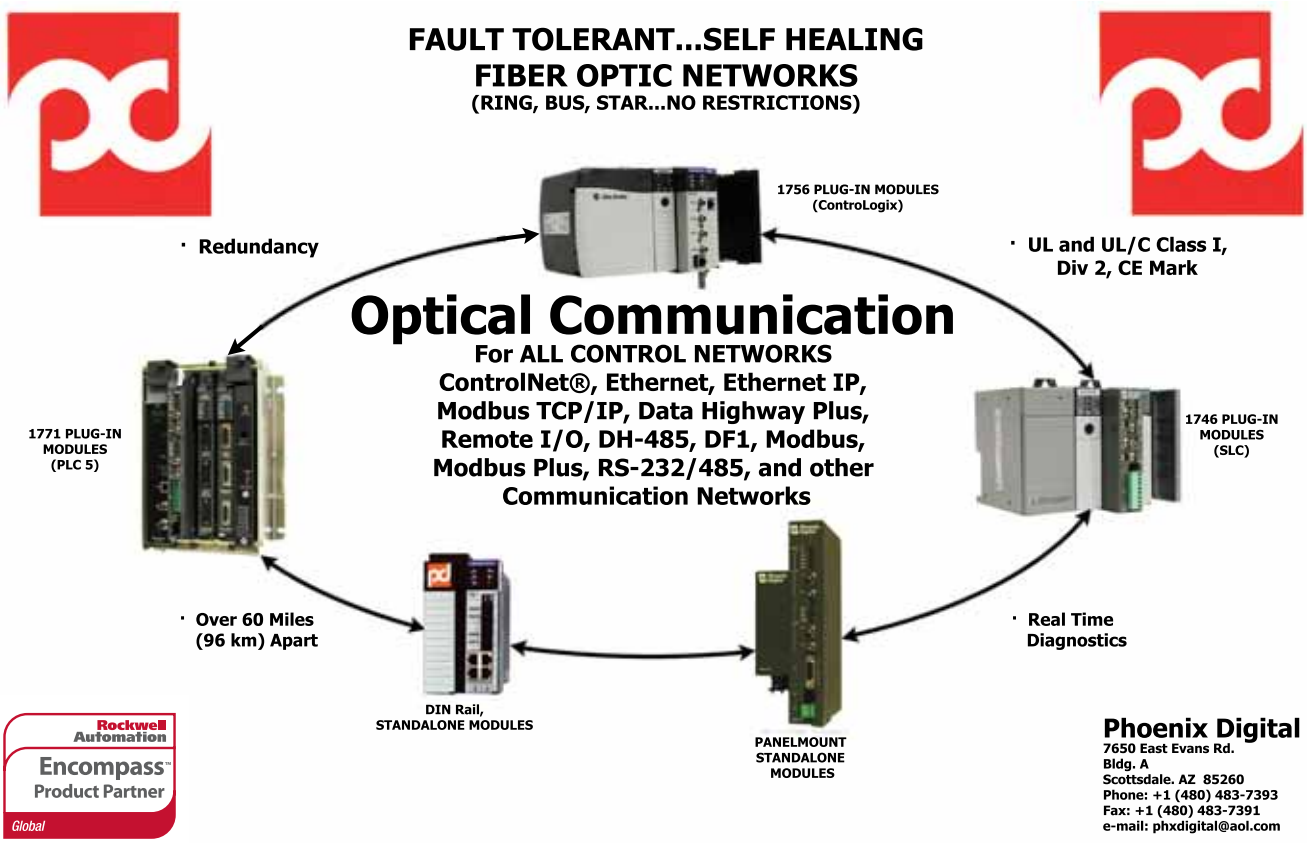
1. David J. C. Constable, Conchita Jimenez-Gonzalez and Richard K. Henderson, "Perspective on Solvent Use in the Pharmaceutical Industry," ©2007 American Chemical Society.

ProsCon Ltd., a Rockwell Automation company, is an engineering firm offering technically unique design solutions to the process industry.

Headquartered in Cork, Ireland, with an office in Dublin, ProsCon primarily serves the pharmaceutical and biotechnology industries and offers expertise in process technology, control systems and information technology.

ProsCon Ltd., A Rockwell Automation Company
www.proscon.com

Rockwell Automation Sustainable Production Solutions
www.rockwellautomation.com/go/tjsustain



>> Process Weighing System

Vishay BLH, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, offers the G4 process control instrument designed for process weighing, force measurement, web tension and high-speed batching/blending. It features synchronized sampling up to 800 updates per second, and integrated, flexible digital I/O. All units support high update rate and high sample rate (up to 20 kHz) with synchronized measurement channels and integrated digital I/O.

The modular structure allows it to be customized to the application. It is available in DIN rail, panel, desktop and harsh environment enclosures. The G4 is compatible with communication interfaces including Remote I/O, DeviceNet, Ethernet, USB, RS485 and RS232. Software upgrades can be downloaded from the Web or can be transferred via USB port connection.

Vishay BLH
www.rockwellautomation.com/go/p-vishay

>> Product Spotlight

I/O Wiring Conversion System

Rockwell Automation offers an I/O wiring conversion system to help users migrate existing control platforms to the Allen-Bradley® ControlLogix® PAC-based I/O platform. It's part of the Rockwell Automation migration solutions program and is designed to reduce costs, risks and complexities involved with PLC migration projects.

The conversion system helps manufacturers cost-effectively replace PLC systems that are no longer supported by their original manufacturers, with the Rockwell Automation Integrated Architecture™.

The system also helps manufacturers that are looking to upgrade to the platform.

By preserving existing field wiring, the conversion system helps users reduce downtime, wiring time and labor costs by lessening the number of connections needed to complete the system migration. Users now can quickly replace Modicon 800 Series I/O racks with the ControlLogix I/O system without disturbing field wiring. The swing-arm conversion system takes the existing Modicon 800 I/O swing arm and converts the field terminations to match a compatible ControlLogix I/O module.

Also, the ControlLogix I/O system takes no more panel room than the existing platform, allowing users to keep the same footprint. The conversion system includes a mounting/ground faceplate, Modicon 800 series swing arm, conversion modules, cover plate, and ControlLogix I/O system with interface cables.

Rockwell Automation Migration Solutions
www.rockwellautomation.com/go/tjmg

>> Product Spotlight

Web-Based Reporting of Plant-Floor Data

Rockwell Automation has launched Rockwell Software® FactoryTalk® VantagePoint, an addition to its FactoryTalk Integrated Production and Performance Suite. FactoryTalk VantagePoint allows users to self-configure Web-based dashboards, trends and reports without time-consuming support resources. The software leverages the FactoryTalk service-oriented architecture and technology acquired through the company's purchase of Incuity Software. It delivers automatic access to production information from both Rockwell Automation and third-party systems.

Through an Internet browser, Microsoft Office user interfaces and predefined connectors to third-party systems, FactoryTalk VantagePoint users can install and configure their systems in as little as a few hours with minimal technical support. This allows employees at every level of a production facility to better monitor and manage productivity, and exercise more control over high-profile operations such as energy efficiency or global supply-chain execution.

The FactoryTalk VantagePoint application will be offered in multiple versions. The first version, FactoryTalk VantagePoint Line Edition (LE), combines data produced by the Rockwell Automation Integrated Architecture™ with other third-party production systems in an easily configured and installed out-of-the-box solution.

It includes standard, pre-configured reports for managing devices, equipment, alarms, events and control loops, as well as batch or production run and shift reports. The application also includes trending and dashboard capabilities to support powerful analysis and uses Microsoft Excel for easier report generation.

The FactoryTalk VantagePoint LE application also features third-party connectors that address native and OPC DA real-time devices, OPC HDA historians, Wonderware IndustrialSQL Server Historian, GE Proficy Historian and OSI PI Historian.

Rockwell Automation soon will release FactoryTalk VantagePoint Enterprise Edition, a more comprehensive version designed to aggregate and analyze data from multiple enterprise systems, production lines or facilities.

Rockwell Automation FactoryTalk VantagePoint
www.rockwellautomation.com/go/tjftvantagepoint

>> PLC Communication Modules

Molex Inc., a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, recently added new features to its BradCommunications SST PLC communication modules that provide the interface required for a Rockwell Automation® PLC controller to connect to specific industrial fieldbuses.

The SST Modbus and Profibus modules for ControlLogix® provide users with increased performance and quicker start-ups by eliminating the ladder logic programming from most applications. The modules also now support Add-On Profiles for easy integration into the ControlLogix system using RSLogix™ 5000 software from Rockwell Automation, and Remote Link Library functionality that allows remote configuration and diagnostics using the Rockwell Automation Integrated Architecture™. Users benefit from faster configuration, better diagnostics and enhanced module data display.

Molex Inc.
www.rockwellautomation.com/go/p-molex

>> AC Line Regeneration Modules

Rockwell Automation Encompass™ Product Partner Bonitron Inc.'s M3345 Line Regen AC line regeneration modules are designed for sustainability. Regenerated energy usually is dissipated as heat through resistive loads. The M3345 Line Regen returns power to the line at 95% efficiency at near unity. It is ideal for use where frequent regenerated energy occurs, to minimize environmental impact, optimize energy efficiency and reduce operational costs.

Bonitron Inc.
www.rockwellautomation.com/go/p-bonitron

>> Electrical System Schematic Software

Bentley Systems, Inc., a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, recently introduced promis•e V8i software for automatically generating electrical system schematics and supporting documentation. The intelligent, easy-to-use software, which can be used on MicroStation, MicroStation PowerDraft or AutoCAD platforms, reduces electrical design time by more than 30%. In addition, it makes the electrical design process more accurate, with more than 2 million up-to-date parts in its extensive content repository.

It can be used as a stand-alone product or to support MicroStation V8i as an add-on. It also can exchange data with other Bentley Plant products via the common project database shared by Bentley's plant design applications — AutoPLANT and PlantSpace.

Bentley Systems, Inc.
www.rockwellautomation.com/go/p-bentley

>> Product Spotlight

Conveyor Scale Controller

The IND560dyn and IND9D56 weighing controllers from Mettler Toledo, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, can be used with a variety of Mettler Toledo scale conveyor systems or other suitable scale conveyor systems using analog load cells.

The IND560dyn EXPRESSWEIGH scale terminal weighs random-weight packages as they pass over the Mettler Toledo 9477 or other suitable scale conveyor. The configurable output can include averaged weight, consecutive number, time and date, package ID and package dimensions.

The IND9D56 EXPRESSWEIGH scale controller offers connections for photo-eyes and other I/O devices to create a complete solution. It also can accept start-and-stop weighing commands from an external "master" interface.

The scale terminal and scale controller provide three-zone check-weighing for up to 25 target IDs. Configurable tolerances and reject timers are easily entered, and the easy-to-read operator display shows a clear graphical comparison between each package's weight and the target value.

The powder-coated, mild steel construction and IP54 ingress protection are standard features of both the IND560dyn and IND9D56. Both units carry NTEP compliance to 3000d.

Mettler Toledo, Inc.
www.rockwellautomation.com/go/p-mettlertoledo

>> Digital Vision Appliance

Rockwell Automation Encompass™ Product Partner DALSA offers the IPD VA61, DALSA's first Gigabit Ethernet-ready (GigE) Vision Appliance. It has two expandable GigE camera ports, industrial I/O and a high-performance processor. It is suited to applications involving multiple monochrome or color GigE cameras. The company's Vision Appliances are embedded machine vision solutions that are quick-to-deploy for automated quality inspection applications.

The VA61 supports DALSA's compact Genie cameras, from 640x480 to 1600x1200 resolution, with either monochrome or color output. The flexible GigE camera ports allow mixing of camera resolutions and expansion to support multi-camera applications. It is available with two software options, iNspect and Sherlock, to address application needs of machine vision users.

DALSA

www.rockwellautomation.com/go/p-dalsa

>> Linear Displacement Transducer

The Synchronous Serial Interface (SSI) Linear Displacement Transducer (LDT) from Ametek Automation & Process Technologies, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, is designed to offer absolute continuous linear position feedback with 1 micro resolution under the most extreme conditions. The unit is IP 68 rated and lab tested to 1,000 Gs of shock and 30 Gs of vibration.

The Gemco 953S VMax is suited for applications that involve shock, vibration, extreme temperatures or exposure to containments.

AMETEK Automation & Process Technologies

www.rockwellautomation.com/go/p-ametek

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>> Wireless Modem

Rockwell Automation Encompass™ Product Partner ESTeem Wireless has released the Model 195Ed wireless modem. It operates in the unlicensed 902-928 MHz spectrum, with radio-frequency data rates from 1 Mbps to 54 Mbps. It's suited for long-range wireless networking applications with integral Ethernet and serial ports to support SCADA, VoIP, video and DF1 protocol interface needs, including wireless Remote I/O.

ESTeem Wireless Modems
www.rockwellautomation.com/go/p-est

>> Product Spotlight

Production Control and Information System

Rockwell Automation recently expanded its Integrated Architecture™ production control and information system with more than 30 new capabilities for end users and machine builders. Featuring the Rockwell Automation Stratix family, advanced process control (APC) and safety functionality, and three new Logix PACs for mid-range machine builders and end users, this expansion is designed to help improve integration and performance within the manufacturing and IT infrastructure.

New APC features include run-time partial import/export functionality, APC function blocks and controller online change logging. Run-time partial import functionality helps reduce downtime risks and improve productivity during deployment and maintenance operations. New APC function blocks provide simpler multivariable control with automatic tuning built in. The controller online change-logging feature allows users to be notified when application changes are made.

New safety tools for use with Allen-Bradley® GuardLogix® PACs offer a suite of 10 specific metalforming instructions certified by German-based Berufsgenossenschaften (BG) as compliant with leading safety standards. These instructions, associated with clutch/brake, control and safety, valve control, and cam and crankshaft monitoring, improve ease of use, simplify diagnostics and streamline maintenance to canning applications and other metal-forming press-control and safety applications.

The new GuardLogix L63S PAC also is available with this release. GuardLogix controllers are designed to help perform safety and standard functions, so the amount of time required for programming, validation and testing is reduced.

The Rockwell Automation Stratix family features a Rockwell Automation and Cisco co-branded line of modular, managed switches with attributes that will add value for both IT and automation control professionals. Other product lines in the portfolio include Embedded Technology, and lines of fixed managed and unmanaged switches, and physical media.

The entire portfolio uses standard, unmodified Ethernet and is optimized for use in EtherNet/IP applications and the Integrated Architecture system. The Cisco operating system, user environment and feature set is exclusive to the Stratix 8000™ line.

For machine builders, the new Allen-Bradley CompactLogix™ L23 PACs leverage the Rockwell Automation Integrated Architecture system in a compact package. Offering three I/O and communication configurations, the new controllers can be expanded using Allen-Bradley 1769 Compact I/O. Multilingual project documentation with language switching also is available.

Rockwell Automation Integrated Architecture
www.rockwellautomation.com/go/tj10ia

>> Coding Systems

RSI Systems, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, offers the CaseJet MVP Plus and CaseJet MVP Procase coding systems, based on HP thermal inkjet printing technology. It features built-in serial ports and TCP/IP and OPC interfaces for easy integration into FactoryTalk applications. The two systems include a single buffer mode to ensure that the correct message is printed on each case.

Both case coding systems include a 15-inch color touch screen, four levels of security, RSI's ProPrint software, a multi-SKU database that stores hundreds of print jobs for fast retrieval, and a controller that allows rapid changeover of print message and helps to ensure accurate message printing. The MVP Pro also comes with an advanced I/O module for easy communication with PLCs and other machines.

RSI Systems LLC

www.rockwellautomation.com/go/p-rsisystems

>> Safety Exhaust Valve

Encompass™ Product Partner Ross Controls recently introduced the size 2 DM2 Category 4 safety exhaust valve available in 1/4-inch and 3/8-inch port sizes. Used in safety systems for machine safeguarding applications, the DM2 Double Valves with Total Dynamic Monitoring and Memory combine the dirt-tolerant, wear-compensating characteristics of poppet technology with new double-valve features. Memory, cross-monitoring and air-flow control functions are integrated into two identical valve elements.

DM2 valves lock and inhibit further operation upon sensing an asynchronous movement of valve elements during actuation or de-actuation. A dedicated reset signal is the only way to reset the valve into the run mode, eliminating accidental resets. It also features a feedback switch for controls system integration for troubleshooting assistance.

Ross Controls

www.rockwellautomation.com/go/p-rosscontrols

>> Backlash-Free Servo Couplings

The ROTEX-GS elastomeric jaw coupling from Rockwell Automation Encompass™ Product Partner KTR Corp. uses a pre-loaded spider element for backlash-free performance and vibration dampening. Urethane and Hytrel spiders are available in three standard durometers, allowing a simple way to fine-tune the system. Cross-clamped hubs are standard. Keyless clamping ring hubs also are available.

KTR Corp.

www.rockwellautomation.com/go/p-ktr

PRODUCT FOCUS

>> Protocol Converter

Rockwell Automation Encompass™ Product Partner Miille Applied Research Co., Inc. offers the MARC Model 266-P00 Omnii-Comm microprocessor-based communication module with an Ethernet option that expands the number and type of applications for this module. It transfers data between the serial ports and the Ethernet port to integrate a serial port protocol into a modern communication network.

It is available in AC- and DC-powered versions with one Ethernet port and two to four serial communication ports. Each serial port can be independently configured to work with more than 60 communication protocols, in both master and slave configurations.

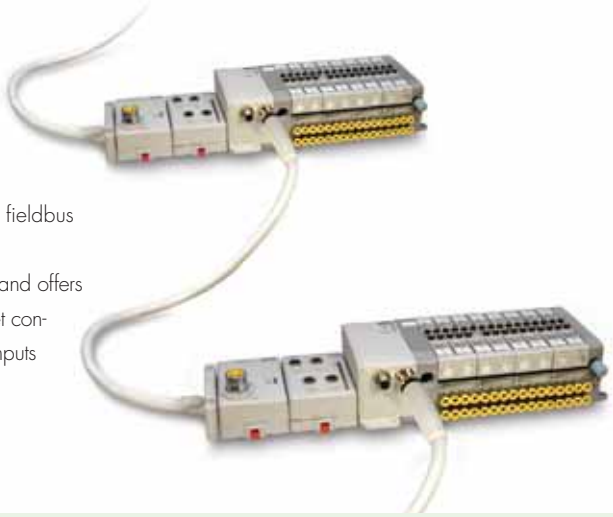
Miille Applied Research Co., Inc.
www.rockwellautomation.com/go/p-marc

>> Directional Control Valves

Parker Hannifin Pneumatic Division, a participating Encompass™ Product Partner in the Rockwell Automation PartnerNetwork™, recently introduced an extension of the ISYSnet fieldbus system for directional valve control in process applications. ISYSnet is a modular fieldbus system connecting to Isys using ControlNet, DeviceNet, and EtherNet/IP.

The ISYS Micro Valve Series connects to the standard ISYSnet Communications Modules and offers an extender cables, expanding the input and output capability of the ISYSnet System. ISYSnet connects to a compact, high-flow valve with a back-to-back valve design. Isysnet handles 264 inputs and outputs. I/O modules are digital or analog and use Me, M12, or M23 connectors.

Parker Pneumatic Division
www.rockwellautomation.com/go/p-parker



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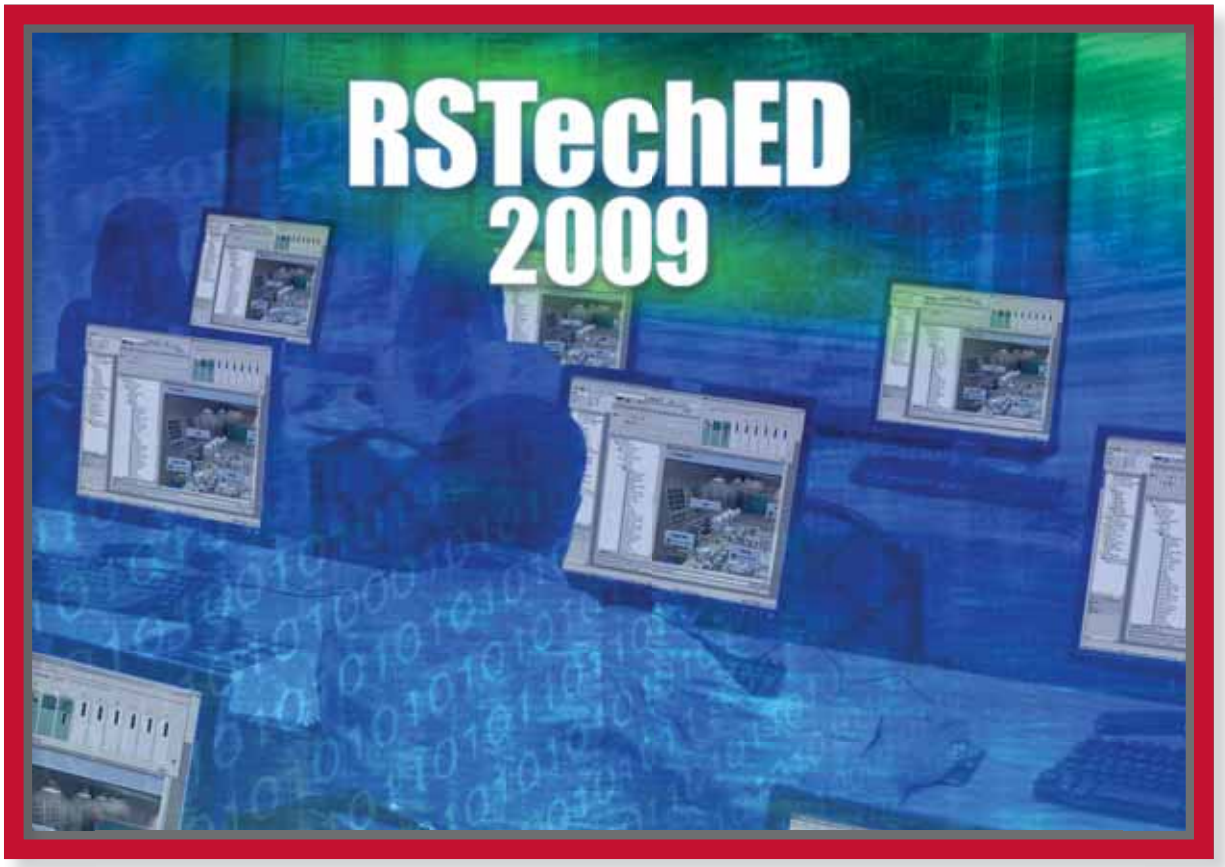

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